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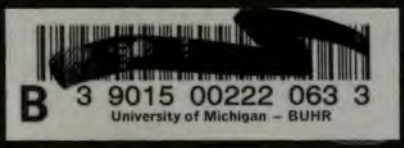
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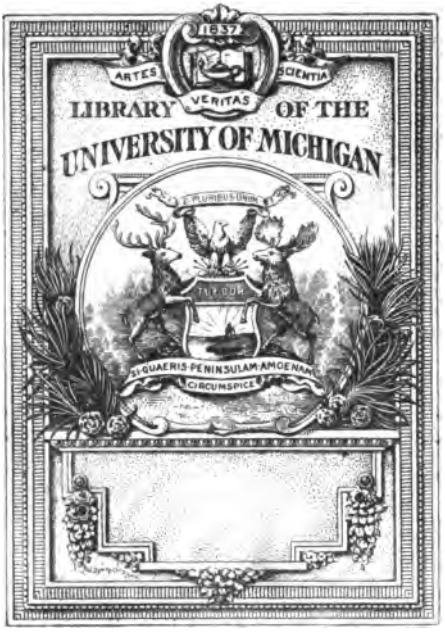

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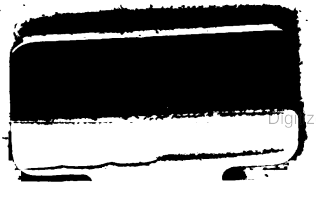

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TRANSACTIONS

OF THE

AMERICAN DERMATOLOGICAL ASSOCIATION

AT ITS

TWENTY-SIXTH ANNUAL MEETING

HELD IN

BOSTON, MASS., SEPTEMBER 18TH, 19TH AND 20TH, 1902

Official Report of the Proceedings

BY

FRANK HUGH MONTGOMERY, M. D., *Secretary*

CHICAGO:
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1902

American Dermatological Association

TWENTY-SIXTH ANNUAL MEETING,

HELD AT THE HOTEL BELLEVUE, BOSTON, MASS., SEPTEMBER 18, 19 AND 20, 1902

First Day, September 18 — Morning Session

ADDRESS BY THE PRESIDENT, DR. GEORGE THOMAS JACKSON, OF NEW YORK

GENTLEMEN: It gives me peculiar pleasure to preside over this meeting of our Association, because it was in this city thirteen years ago that I first attended a meeting of the Association.

But, alas, my pleasure is mixed with pain, a pain that most of you must share with me when you recall the circumstance that in 1889, when we met here before, the incumbent of the Presidential chair was our loved and lost friend, Dr. J. E. Graham. He was one of the best of men; warm of heart; clear of head; genial, loving, and to be loved. Little did I then dream that so soon he would die; he was so ruddy of countenance, apparently the picture of perfect health.

Dr. Graham was born in Brampton, Ontario, Canada, in May, 1847. His preparatory education was gained in the Weston Grammar School and the Upper Canada College. He graduated from the Toronto School of Medicine in 1869 at the head of his class, receiving both the University and the Starr gold medals. From Toronto he went to Brooklyn, N. Y., and became one of the resident physicians on the staff of the Brooklyn City Hospital. He subsequently studied medicine in Vienna and London, taking the degree of L.R.C.P., London.

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He returned to Toronto in 1872 and began the practice of his profession. In 1875 he was appointed physician to the Toronto General Hospital. At about that time he became connected with the Toronto School of Medicine as Demonstrator of Anatomy and Microscopy. Subsequently he held the position of Lecturer on Chemistry. In 1887 he was made Professor of Clinical Medicine and Medical Pathology, and Lecturer on Dermatology. In 1892 he became Professor of Medicine.

In 1884 symptoms of diabetes showed themselves. The disease so impaired his health that he devoted himself more and more to the work of a consultant. In 1893 he left Toronto for a time, took up his residence in London, and gained the degree of M.R.C.P., London.

This brief sketch of Dr. Graham's life shows that he was a hard student, devoted to his profession, and worthy of all the honors and emoluments that were heaped upon him.

In 1873 he married Mary J. Aikins. To them were born three daughters and one son.

In 1899, when he felt that he could not live long, he resigned from our Association because he did not believe in belonging to any organization in which he could not do his full share of work. In that year he went south, for his health, and was taken with influenza while in Baltimore. Unfortunately this was followed by slight pulmonary tuberculosis, which, engrafted on a system already greatly weakened by diabetes, was rapidly fatal. He died in Muskoka, Canada, on July 6, 1899, in the fifty-third year of his age. He was survived by his widow and four children. His son is a member of our profession. May his career be as honorable as his father's!

I am glad that it has so chanced that I stand here in the place in which he once stood, if only that I might put on record in our Transactions this sketch of his life and this expression, all inadequate though it is, of the esteem in which we all held him.

It is a remarkable fact that in the first quarter of a century that this Association has existed only three active members have died, namely: Dr. H. C. Hand, of St. Paul; Dr. E. Wigglesworth, of Boston, and Dr. R. B. Morrison, of Baltimore.

Dr. Hand I never knew. He was one of the original members of the Association, and died so early in its history that there appears a resolution upon his death in the first number of our Transactions in 1877. I am told by one who knew him well that he was a man of sterling character and fine attainments.

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Dr. Edward Wigglesworth was one of those who signed the call that wakened our Association into life in 1876. Had he done nothing else that would have been a cause for lasting gratitude on our part. But he did much more. He was vice president of the Association from 1879 to 1881, and president from 1885 to 1886. He contributed three papers to our Transactions, and took an active part in our discussions. He attended our meetings regularly, and his genial manner added much to their success on the social side. His death was the first sad break in our ranks, and there was not one of us who did not mourn for him.

Dr. Wigglesworth was born in Boston on December 30, 1840. After receiving his preliminary education in Chauncey Hall and Latin Schools he entered Harvard College, from which he was graduated in 1861. From there he passed to the Harvard Medical School, from which he graduated in 1865. Being possessed of ample means, he studied in Europe for five years after gaining his diploma, returning to this country in 1870. From then until he died he practiced his profession in Boston, devoting himself to dermatology. For many years he was one of the physicians for diseases of the skin to the Boston City Hospital. He was a member of a number of medical societies, among which were our own Association and the Boston Dermatological Club. He was also a corresponding member of the New York Dermatological Society.

He was married in 1882 to Sarah Willard Frothingham, who, with his two children, survives him.

He died on January 3, 1896, in Boston, of apoplexy following Bright's disease, in the fifty-sixth year of his age.

Dr. Robert Brown Morrison became a member of this Association in 1884. He was its vice president from 1886 to 1887, and its president from 1893 to 1894. He contributed six papers to our Transactions, and like Dr. Wigglesworth, added greatly to the success of our meetings by taking part in the discussion of papers. His death in 1898 is so recent that nearly all of you knew him, and to know him was to like him, for he was a thoroughly likable man. He was the soul of hospitality, and when we think of our meeting in Baltimore we recall his indefatigable and successful efforts to make it enjoyable.

Dr. Morrison was born in Baltimore on March 13, 1851. His preliminary education was received in Phillip's Academy, Exeter, N. H., from which in 1869 he went to Harvard College. He did not graduate in Arts, but went from Cambridge to study in Göttingen before

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taking up the study of medicine. He received his degree in medicine from the medical department of the University of Maryland. After a few years of practical experience he went to Europe in 1882 and studied dermatology in Prague, Vienna, Hamburg and Berlin.

He was the first one to hold the chair of Dermatology in the Baltimore Polyclinic. He resigned this to become Clinical Professor of Dermatology in the University of Maryland, a position that he filled with distinction until 1889, when he received the high honor of being appointed Clinical Professor of Dermatology in the Johns Hopkins University, which he held until his death.

In 1878 he married Miss E. H. Williams, who, with his two daughters, survives him.

He died in September, 1898, in the city of his birth, of Bright's disease, in the forty-eighth year of his age.

By his will he gave to the Johns Hopkins Hospital his valuable medical library.

Since last we met in this city Drs. Graham, Wigglesworth and Morrison have died. We who knew them can but miss them while we meet here to-day.

The American Dermatological Association was founded in 1876. Its birthplace was Philadelphia, and it was the child of six fathers, namely: Dr. L. D. Bulkley and George H. Fox of New York, Dr. L. A. Duhring of Philadelphia, Dr. E. Wigglesworth of Boston, Dr. I. E. Atkinson of Baltimore, and Dr. L. P. Yandell of Louisville. These gentlemen sent an invitation to some fifty physicians in the United States who were interested in the subject of dermatology and syphilis to join with them in forming a national association for the study of those subjects.

It has seemed to me that an historical sketch of the Association during the first quarter of a century of its life just completed would be interesting and valuable. By the time the next quarter of a century is passed many of us will be but memories. But the Association will not die, and I venture to hope that a future historian will arise who will bring our history down to 1926.

The original members of the Association were I. E. Atkinson of Baltimore, W. Brodie of Detroit, A. Brooks of Hot Springs, T. R. Brown of Baltimore, L. D. Bulkley of New York, S. C. Bussey of Washington, R. Campbell of New York, H. F. Damon of Boston, W. H. Draper of New York, L. A. Duhring of Philadelphia, G. H. Fox of New York, H. C. Hand of St. Paul, W. A. Hardaway of St. Louis,

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C. Heitzman of New York, J. N. Hyde of Chicago, B. J. Jeffries of Boston, E. L. Keyes of New York, F. F. Maury of Philadelphia, J. A. Octerlony of Louisville, H. G. Piffard of New York, A. R. Robinson of New York, C. J. Smith of Chicago, R. W. Taylor of New York, A. Van Harlingen of Philadelphia, R. F. Weir of New York, F. D. Weisse of New York, J. C. White of Boston, E. Wigglesworth of Boston, and L. P. Yandell of Louisville.

It is evident that even at its beginning our Association was a representative one, its members coming from all parts of the United States. From a study of our records it is impossible to discover how many of the original members qualified. Five have resigned, five have been dropped from non-attendance, two have died, seven are unaccounted for, and ten are still active members.

The Association organized in 1876 by electing J. C. White, president; L. A. Duhring, vice president; L. D. Bulkley, secretary; and J. N. Hyde, treasurer.

The first annual meeting was held at Niagara Falls on September 4, 5, and 6, 1877. Every year since then the Association has met. There were present at the first meeting Drs. Atkinson, Brodie, Bulkley, Campbell, Duhring, Fox, Hardaway, Heitzmann, Hyde, Taylor, Van Harlingen, White, Wigglesworth and Yandell. All of them except Dr. Brodie read papers.

A number of prominent European dermatologists were asked to take part in the proceedings of the first meeting, and many of them sent letters of congratulation upon the founding of the Association. Dr. Duckworth of London, sent a paper on the treatment of severe bed sores.

During the first twenty-five years of our existence we have been presided over by nineteen presidents, namely: James C. White from 1876 to 1878, and from 1896 to 1897; Louis A. Duhring from 1878 to 1880; James N. Hyde from 1880 to 1882 and from 1897 to 1898; Robert W. Taylor from 1882 to 1884; William A. Hardaway from 1884 to 1885; Edward Wigglesworth from 1885 to 1886; Henry G. Piffard from 1886 to 1887; Isaac E. Atkinson from 1887 to 1888; James E. Graham from 1888 to 1889; Prince A. Morrow from 1889 to 1890; Francis B. Greenough from 1890 to 1891; Edward B. Bronson from 1891 to 1892; George H. Fox from 1892 to 1893; Robert B. Morrison from 1893 to 1984; Samuel Sherwell from 1894 to 1895; Andrew R. Robinson from 1895 to 1896; John A. Fordyce from 1898 to 1899; Henry W. Stelwagon from 1899 to 1900; Francis J. Shep-

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herd from 1900 to 1901. It will be observed that Drs. White and Hyde have served three terms as President, and Drs. Duhring and Taylor two terms each.

From 1876 to 1887 we elected two vice presidents every year; since then only one each year. Twenty-five of our members have served as vice presidents, namely: Louis A. Duhring from 1876 to 1877 and from 1896 to 1897; Robert W. Taylor from 1876 to 1877; Carl Heitzmann from 1877 to 1878 and from 1880 to 1881; Lucius D. Bulkley from 1877 to 1878; James N. Hyde from 1878 to 1879; Samuel Sherwell from 1878 to 1879 and from 1888 to 1889; Edward Wigglesworth from 1879 to 1880 and from 1880 to 1881; William A. Hardaway from 1879 to 1880 and from 1881 to 1882; George H. Fox from 1881 to 1882; Isaac E. Atkinson from 1882 to 1883 and from 1885 to 1886; Andrew R. Robinson from 1882 to 1883 and from 1885 to 1886; James E. Graham from 1883 to 1884 and from 1884 to 1885; Arthur Van Harlingen from 1883 to 1884 and from 1884 to 1885; Francis B. Grenough from 1885 to 1886; Robert B. Morrison from 1886 to 1887; Prince A. Morrow from 1887 to 1888; George H. Tilden from 1889 to 1890; Le Grand N. Denslow from 1890 to 1891; Francis J. Shepherd from 1891 to 1892 and from 1895 to 1896; Henry W. Stelwagon from 1892 to 1893; George T. Jackson from 1893 to 1894 and from 1899 to 1900; John A. Fordyce from 1894 to 1895; Edward B. Bronson from 1897 to 1898; John T. Bowen from 1898 to 1899; Douglas W. Montgomery from 1900 to 1901. It will be observed that Drs. Atkinson, Duhring, Graham, Hardaway, Heitzmann, Jackson, Robinson, Shepherd, Sherwell, Van Harlingen, and Wigglesworth have served two terms each.

From 1876 to 1887 it was the custom to elect each year a secretary and a treasurer. Since 1887 the two offices have been held by one officer, who is known as the secretary and treasurer. During the twenty-five years there have been only nine secretaries, five of whom have discharged the duties of the double office.

Lucius D. Bulkley was secretary from 1876 to 1877, one year.

Robert W. Taylor was secretary from 1877 to 1879, two years.

Arthur Van Harlingen was secretary from 1879 to 1883, four years.

W. T. Alexander was secretary from 1883 to 1885, two years.

George H. Tilden was secretary from 1885 to 1889, four years. During the last two years he was also treasurer.

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George T. Jackson was secretary and treasurer from 1889 to 1893 and from 1898 to 1899, five years.

Charles W. Allen was secretary and treasurer from 1893 to 1896, three years.

John T. Bowen was secretary and treasurer from 1896 to 1898, two years.

Frank H. Montgomery was secretary and treasurer from 1899 to 1901, two years, and is still the incumbent of the office.

The office of treasurer, when that office existed by itself, was held by five of our members, namely: James N. Hyde, from 1876 to 1877, one year; Isaac E. Atkinson from 1877 to 1882, five years; George H. Rohé from 1882 to 1885, three years; H. W. Stelwagon 1885 to 1886, one year; Le Grand N. Denslow from 1886 to 1887, one year.

Up to 1891 the council consisted of the retiring president and the other officers of the society. In 1891 it was determined to elect each year a member-at-large to the council. The following ten members have served in that capacity: George H. Fox, 1891 and 1892; James C. White, 1892 and 1893; John A. Fordyce, 1893 and 1894; P. A. Morrow, 1894 and 1895; John T. Bowen, 1895 and 1896; Edward B. Bronson, 1896 and 1897; George T. Jackson, 1897 and 1898; Andrew R. Robinson, 1898 and 1899; Thomas C. Gilchrist, 1899 and 1900; James C. Johnson, 1900 and 1901.

During the first twenty-five years of our existence we have had eighty members on our rolls. The names of the original members have been given already. I now give the names of those elected since 1876, with the years in which they were elected:

In 1877, W. H. Geddings of Aiken, S. H. Durkee of Boston, F. P. Foster of New York, S. Sherwell of Brooklyn.

In 1878, F. B. Bronson of New York, F. B. Grenough of Boston, and G. Rohé of Baltimore.

In 1879, J. E. Graham of Toronto.

In 1882, P. A. Morrow of New York, H. W. Stelwagon of Philadelphia, and W. T. Alexander of New York.

In 1884, G. H. Tilden of Boston, R. B. Morrison of Baltimore, F. C. Curtis of Albany, and L. N. Denslow of St. Paul.

In 1888, J. S. Howe of Boston, W. T. Corlett of Cleveland, G. T. Jackson of New York, H. G. Klotz of New York, F. J. Shepherd of Montreal, Canada, and J. Zeisler of Chicago.

In 1889, J. T. Bowen of Boston, and C. W. Allen of New York.

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In 1890, C. W. Cutler of New York, J. A. Fordyce of New York, M. B. Hartzell of Philadelphia, and J. Grindon of St. Louis.

In 1891, G. T. Elliot and L. Heitzmann of New York.

In 1892, A. Post of Boston.

In 1893, J. A. Cantrell of Philadelphia.

In 1894, S. Lustgarten of New York.

In 1895, I. Dyer of New Orleans, D. W. Montgomery of San Francisco, and J. McF. Winfield of New York.

In 1896, T. C. Gilchrist of Baltimore, and S. Pollitzer of New York.

In 1897, F. H. Montgomery of Chicago, M. B. Hutchins of Atlanta, and J. C. Johnston of New York.

In 1899, R. B. Carmichael of Washington, A. Ravogli of Cincinnati, H. H. Whitehouse of New York, and W. A. Pusey of Chicago.

In 1900, O. H. Holder of New York, G. W. Wende of Buffalo, and C. J. White of Boston.

In 1901, F. J. Leviseur and H. Goldenberg of New York, L. C. Pardee of Chicago, and G. H. Harding of Boston.

It will be noticed that new members have been added to our roll every year excepting in 1880, 1881, 1883, 1885, 1886, 1887, and 1898. The banner year was in 1888, when six new members were elected. It happens that of these four are now on the council, one of them being the president of last year, one the present incumbent of that office, one our vice president, and one the member-at-large of the council.

Of those elected since 1876, the names of thirteen no longer appear on our list of members, most of them having resigned.

Besides these active members we have elected from time to time the following honorary members: Prof. T. de Amicis of Naples, Dr. T. McC. Anderson of Glasgow, Dr. E. Besnier of Paris, Dr. H. R. Crocker of London, Dr. A. Hardy of Paris, Prof. F. Hebra of Vienna, Sir J. Hutchinson of London, Prof. M. Kaposi of Vienna, Prof. Leloir of Lille, Prof. A. Neiser of Breslau, Prof. I. Neumann of Vienna, Prof. F. J. Pick of Prague, Prof. E. Vidal of Paris, and E. Wilson of London.

By looking over the subjoined list of our places of meeting, we find that we have been migratory. We have met in eleven states and in Canada. But wherever we have met we have found that our time was pleasantly and profitably passed. Up to 1897 our whole time was given to the reading and discussion of papers. It was then con-

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sidered that it would be more to our profit if we devoted one session to the examination of patients and the discussion of their diseases. This has necessitated our meeting in the large cities. As we are a part of the Congress of American Physicians and Surgeons, we have met every third year in Washington since 1888.

Our places of meeting have been as follows: Niagara Falls, N. Y., in 1877; Saratoga Springs, N. Y., in 1878; New York City in 1879; Newport, R. I., in 1880, 1881 and 1882; Lake George, N. Y., in 1883; West Point, N. Y., in 1884; Greenwich, Conn., in 1885 and 1886; Baltimore in 1887; Washington, D. C., in 1888, 1891, 1894, 1897 and 1900; Boston, Mass., in 1889; Richfield Springs, N. Y., in 1890; New London, Conn., in 1892; Milwaukee, Wis., in 1893; Montreal, Canada, in 1895; Hot Springs, Va., in 1896; Princeton, N. J., in 1898; Philadelphia, Penn., in 1899; and Chicago, Ill., in 1901.

Since the founding of the Association a volume of Transactions has been published every year. Up to 1893 these consisted merely in a brief summary of the papers and a report of the discussion of them. In 1893 the first complete volume of Transactions was published, giving papers in full and the discussions, together with illustrations of the papers. This was a distinct advance. In my opinion, we should never go back to the previous style. With our large and growing membership and the dignity our age gives us, nothing short of the complete report of our meetings is worthy of us.

Three hundred and seventy-six papers have been read before our Association. The least number in any one year was five, in 1882, and the largest number was twenty-six, in 1891. In 1884 and 1893 only eight were read, and only three times has the number exceeded twenty. The average number is fifteen. These 376 papers have been contributed by fifty-three of our members. Dr. Hyde has read the greatest number of papers, twenty-one. He is followed closely by Dr. Taylor with twenty, Dr. Duhring with eighteen and Dr. Stelwagon with seventeen.

The list of names of those contributing papers is here given, followed by a numeral indicating the number of papers read. Alexander (1), Allen (10), Atkinson (9), Bowen (7), Bronson (11), Brooks (1), Bulkley (10), Campbell (1), Cantrell (3), Corlett (9), Cutler (1), Denslow (3), Duhring (18), Dyer (2), Elliot (5), Fordyce (13), Foster (1), Fox (13), Gilchrist (6), Graham (8), Greenough (6), Grindon (4), Hardaway (12), Hartzell (8), Heitzmann (12), Holder (1), Hyde (21),

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Jackson (7), Johnston (4), Klotz (6), Montgomery, D. W. (3), Montgomery, F. H. (4), Morrison (6), Morrow (12), Piffard (6), Pollitzer (5), Pusey (1), Ravogli (1), Robinson (7), Rohé (2), Shepherd (9), Sherwell (14), Smith (1), Stelwagon (17), Taylor (20), Tilden (3), Van Harlingen (7), Wende (2), White, J. C. (15), Wigglesworth (3), Winfield (2), Yandell (1), and Zeisler (8).

It is noticeable that as members are elected one year they almost invariably contribute a paper the next year.

Besides the 376 papers by the members of the Association, we have listened to six papers by invited guests. Dr. Duckworth of London sent one on Bed Sores, in 1877; Dr. DeSilva Lima of Bahia sent one on Ainhum, in 1880; Dr. H. O. Schmidt in 1881 read one on the Pathology of Leprosy; Dr. P. G. Unna of Hamburg was with us in 1887, and read a paper on The Treatment of Leprosy; Dr. C. C. Ransom of New York in 1890 gave an account of the action of the waters of Richfield Springs, and in 1893 Dr. H. R. Crocker of London read a paper on Lupus Erythematosus.

The subjects chosen for the papers have covered nearly the whole field of dermatology. A study of the subjoined list of subjects shows that only three papers on eczema have been read, only one on trichophytosis, and none on dermatitis seborrhoicum.

In 1891 it was determined that a subject for general discussion should be chosen by the council each year. This was another distinct step in advance and has proved most successful. Since 1897 it has been the custom to select one or more of the members to present the chosen subject in well-studied papers, and this has been another step in advance. The subjects for general discussion have been the following: Alopecia areata (1892), Pityriasis rosea and Pemphigus (1893), Electrolysis (1895), Diet and Alcohol in Eczema and Psoriasis (1896), Syphilis (1897), Lupus Erythematosus (1898), The Rôle of Pus Organisms in Diseases of the Skin (1899), Malignant Diseases of the Skin (1900), and Diseases of the Nails (1901).

A list of the subjects presented for our consideration are here given. The numeral after the subject indicates the number of papers upon the subject:

Anatomy of the skin (3); Etiology, general considerations (3), cold (1), sleep (1), imperfect or deficient urinary secretion (1); Therapeutics (35), being upon acid, carbolic and salicylic, anthrarobin, aristol, calx sulphurata, chloral, cosmetics, diet, electrolysis, epilation, goose grease, ichthyol, iodine, iodoform, intrafollicular applications,

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lanolin, linseed oil, mineral waters, naphthol, oleates, petroleum, pilocarpin, resorcin, Roentgen rays, rubber plasters, salt, thilanin, and thyroid feeding; Classification (2); Dermatological hints (1); Teaching of dermatology (1); Scale of measurements (1); Acne (5); Acne varioliformis (1); Adeno-carcinoma (1); Ainhum (2); Alopecia (4); Alopecia areata (3); Angiokeratoma (2); Angioma pigmentosum et atrophicum (2); Angioma serpiginosum (1); Aspergillus nigrescens (1); Carbuncle (1); Carcinoma cutis (1); Chondroma of lip (1); Dermatitis (1), blastomycetica (6), exfoliativa (2), gangrenosum (3), hemostatica (1), herpetiformis (8), malignant papillary (2), medicamentosa (1), palmaris et plantaris (1), papillaris capilitii (2), protozoic (1), traumatica (1), vegetans (1), venenata (3); Dermatoses, germ (1), glycosuric (1), immigrant (1), trophic (1); Dysidrosis (1); Eczema (3); Eczema marginatum (1); Elephantiasis (2); Endothelioma (1); Epidermolysis bullosa (1); Epithelioma (3); Eruptions, feigned (1); Erysipelas (3); Erythema elevatum diutinum (1), induratum (1), multiforme (1), nuchae (1); Erythodermia pityriasique en plaques disseminées (1); Exfoliation of lips (1); Favus (3); Folliculitis, agminated (1); Fordyce's disease of lips (1); Fragilitas crinium (2); Gangreneopsis (1); Granuloma (1); Hand and foot disease (1); Herpes gestationis (1), progenitalis (1), zoster (2); Hydroa estivale (1), vacciniforme (1); Hydroadenitis (1); Hypertrichosis (4); Ichthyosis congenita (2); Impetigo contagiosa (2), herpetiformis (4), simplex (1); Keratosis follicularis (1); Kraurosis vulvæ (1); Lepra (12); Leucemia cutis (1); Leucopathia unguium (1); Lichen planus (5), ruber (4), scrofulosorum (2), tropicus (1); Lupus erythematosus (6), vulgaris (4); Lymphangioma circumscriptum (3), tuberosum multiplex (1); Malignant disease of the skin (5); Miliaria (1); Molluscum contagiosum (57), verrucosum (1); Mycetoma (1); Mycosis fungoides (7); Myoma multiplex (1); Myxangioma (1); Nevus (7), linare (1); Nails, diseases of (3); Negro, skin diseases of (1); Neuroses of the skin (3); Papilloma cutis (3); Parasitic diseases (2); Pediculosis (1); Pemphigus foliaceus (1), vegetans (1); Pityriasis rosea (1); Plica (1); Pompholyx (1); Porokeratosis (1); Prurigo (5); Pruritus (5); Psoriasis (7); Psorospermosis (1); Purpura (3); Rare diseases of the skin (11); Raynaud's disease (1); Rhinoscleroma (1); Rosacea (2); Rötheln (1); Sarcoma (5); Scabies (2); Scarlatiniform eruption (1); Scleroderma (5); Scrofuloderma (2); Seborrhea (1); Stigmata, bleeding (1); Sudamina (1); Sycosis capitis (1); Syphilis (29); Trichophytosis (1); Tuberculosis cutis

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(5); Tumors, multiple of skin (2), of scalp (1); Tylosis (1); Ulcers, buccal (1), multiple cachectic (1); Ulerythema sycosiforme (1); Urticaria pigmentosa (3); Variola (1); Vitiligo (1); Xanthoma (4); and Xeroderma (2).

This long list of papers by no means represents the literary activity of the members of this Association. Besides the hundreds of papers read by our members before other medical societies and published in many medical journals both in this country and in foreign lands, and articles contributed to various systems of medicine, there have appeared fifty-eight books written by twenty of our members. By their efforts the status of American Dermatology in foreign lands has been advanced to a high plane. American text-books on Dermatology are now studied by English-speaking students in all parts of the world. Had it not been for the impetus given by this Association to the study of dermatology in this country, it is fair to assume that this would not have been the case.

The books on Dermatology and Syphilis written by our members are as follows:

Bulkley, L. D. 1. Eczema and its management, N. Y., 1881; 2d Ed., 1884; 3d Ed., 1900. 2. Manual of skin diseases, N. Y., 1882; 4th Ed., 1898. 3. A treatise on acne, N. Y., 1885. Acne and alopecia, Detroit, 1892. Syphilis in the innocent, N. Y., 1895.

Corlett, W. T. A treatise on the acute infectious exanthemata, Phila., 1901.

Cutler, C. W. 1. Differential diagnosis of the disease of the skin, N. Y., 1887. 2. Lectures on dermatology, N. Y., 1894.

Duhring, L. A. 1. A practical treatise on disease of the skin, Phila., 1877; 2d Ed., 1881; 3d Ed., 1882. 2. Atlas of skin diseases, Phila., 1877 to 1883. 3. Epitome of skin diseases, Phila., 1886. 4. Cutaneous medicine, Phila., 1892 et seq.

Fox, G. H. 1. (with Piffard) Venereal and cutaneous memoranda, N. Y., 1877; 2d Ed., 1880. 2. Photographic illustrations of skin diseases, N. Y., 1880; 2d Ed., 1885. 3. Photographic illustrations of cutaneous syphilis, N. Y., 1881. 4. The use of electricity in the removal of superfluous hair and other facial blemishes, Detroit, 1886. 5. Photographic atlas of skin diseases, N. Y., 1897. 6. The skin disease of children, N. Y., 1897. 7. Photographic atlas of skin diseases, Physicians' edition, Phila., 1901.

Hardaway, W. A. 1. Essentials of vaccination, Chicago, 1882. 2. Manual of skin diseases, St. Louis, 1890; 2d Ed., Phila., 1898. 3.

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(with Bangs) American text-book of genito-urinary diseases, syphilis, and diseases of the skin, Phila., 1898.

Hyde, J. N. 1. A practical treatise on skin diseases, Phila., 1883; 2d Ed., 1888; 3d Ed., 1893; 4th Ed. (with Montgomery), 1897; 5th Ed., 1900; 6th Ed., 1901. 2. On the affections of the skin induced by temperature variations, etc., Chicago, 1886. 3. (with Montgomery) Manual of skin and venereal diseases, Phila., 1895; 2d Ed., 1900. 4. Smallpox in Illinois, Chicago, 1900.

Jackson, G. T. 1. Diseases of the hair and scalp, N. Y., 1887; 2d Ed., 1894. 2. The ready reference handbook of skin diseases, Phila., 1892;; 2d Ed., 1896; 3d Ed., 1899; 4th Ed., 1901.

Johnston, J. C. Atlas of skin and venereal diseases, N. Y., 1901.

Keyes, E. L. 1. (with Van Buren) Genito-urinary diseases and syphilis, N. Y., 1874. 2. The tonic treatment of syphilis, N. Y., 1877. 3. Venereal diseases, N. Y., 1880; 2d Ed. (with Chetwood), N. Y., 1899. 4. Genito-urinary diseases and syphilis, N. Y., 1888. 5. Some fallacies concerning syphilis, N. Y., 1889.

Morrow, P. A. 1. Syphilis and marriage (from the French), N. Y., 1881. 2. Drug eruptions, N. Y., 1887. 3. Atlas of skin and venereal diseases, N. Y., 1889. 4. A system of genito-urinary diseases, syphilis, and dermatology, N. Y., 1892 to 1894.

Piffard, H. G. 1. An elementary treatise upon diseases of the skin, N. Y., 1876. 2. (with Fox) Venereal and cutaneous memoranda, N. Y., 1877; 2d Ed., 1880. 3. Bibliotheca dermatologica, N. Y., 1879. 4. Materia medica and therapeutics of the skin, N. Y., 1881. 5. Cutaneous memoranda, N. Y., 1885. 6. The modern treatment of eczema, Detroit, 1886. 7. A practical treatise on diseases of the skin, N. Y., 1891.

Ravogli, A. Hygiene of the skin, Cincin., 1888.

Robinson, A. R. A manual of dermatology, N. Y., 1884.

Rohé, G. H. 1. Practical notes on the treatment of skin diseases, Balt., 1885; 2d Ed., 1886. 2. (with Lord) A practical manual of skin diseases, Phila., 1892.

Stelwagon, H. W. 1. Essentials of diseases of the skin, Phila., 1890; 2d Ed., 1894; 3d Ed., 1899. 2. Mracek's handbook of diseases of the skin, Phila., 1899.

Taylor, R. W. 1. Syphilitic diseases of the osseous system in infants and young children, N. Y., 1875. 2. (with Bumstead) The pathology and treatment of venereal diseases, N. Y.; 4th Ed., 1879; 5th Ed., 1883. 3. Clinical atlas of venereal and skin diseases, Phila.,

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1888. 4. The pathology and treatment of venereal diseases, Phila., 1895. 5. A practical treatise on sexual disorders in the male and female, Phila., 1897; 2d Ed., 1900. 6. A practical treatise on genito-urinary and venereal diseases and syphilis, Phila., 1900.

Van Harlingen, A. A handbook of the diagnosis and treatment of skin diseases, Phila., 1884; 2d Ed., 1889; 3d Ed., 1895.

White, J. C. Dermatitis venenata, Boston, 1887.

An account of the literary activity of the members of this Association would be incomplete that did not mention the Journal devoted to our specialty that under various names has been maintained through the whole life of our Association by some of its members. The work has been a labor of love, for the journal has been run at considerable loss at times. It has always been a periodical of the first class, and a credit to its editors.

Dr. L. D. Bulkley issued the first number of *The Archives of Dermatology* in October, 1874, and continued its publication until October, 1882. Drs. H. G. Piffard and P. A. Morrow issued the first number of *The Journal of Cutaneous and Venereal Diseases* in October, 1882, and continued in the joint editorship until 1886, when Dr. Piffard retired.

Dr. P. A. Morrow continued the journal as its sole editor. In 1887 the title was changed to that of *The Journal of Cutaneous and Genito-Urinary Diseases.* In 1889 Dr. J. A. Fordyce was associated in the editorship, and in 1892 he assumed entire charge, Dr. Morrow retiring. In 1896 Dr. J. C. Johnston was associated with Dr. Fordyce in the management of the journal. In 1897 Dr. Fordyce retired, and since then the journal has been conducted by Drs. Johnston and Swinburne with the coöperation of six of our members.

Since the foundation of our Association we have published statistical tables showing the frequency of skin diseases in this country. The first chairman of the committee on statistics was Dr. J. C. White. For the past seventeen years Dr. J. N. Hyde has been the chairman. It is to be regretted that these statistics are not as complete as they should be. This incompleteness is not due to any lack of effort on the part of the committees, but to an apparent lack of interest on the part of the members. Even taking into account the incompleteness of the returns the tables are the most complete of anything of the kind in the world, and are of value as shown by the frequency with which they are quoted. The first report of the committee was made in 1877, and the number of cases reported was 17,000. There were reported

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in 1891 22,455 cases, and the combined returns for the twenty-five years cover 386,426 cases.

Thus ends the history of the past. The future of the Association is assured. We have always preserved a high standard of requirements for the admission of new members, and this should be kept high. No one should be admitted into our fellowship unless he has made himself known to most of us by the excellence of his work. A purely local reputation should not be considered sufficient for admission into our body.

The record of the past is one of which we may well be proud. With the passing years we have grown stronger and stronger, and we come down to the present with a membership of forty-eight from all parts of this country and from Canada. We are a harmonious body working for the honor of our Association, and the work we do is of the highest grade.

The first paper was read by DR. JAMES S. HOWE, of Boston, on

CASES OF BULLOUS DERMATITIS FOLLOWING VACCINATION

From July 1, 1901, to July 1, 1902, there have been 1,195 cases of smallpox reported by the Board of Health as having occurred in the city of Boston. During this same interval there have been, as near as I can learn, approximately about 230,000 cases of vaccination all performed by officers of the City Board of Health gratuitously. In addition to this large number of cases, 1,750 persons were vaccinated at the Boston City Hospital, and to these cases we must, of course, add a very large number of persons who were vaccinated by their own medical attendants.

Early in January of the present year, while the wave of vaccination, as we might term it, was at its full height, there were received into the Boston City Hospital for treatment a remarkable series of cases of Bullous Dermatitis. All of these cases appeared in persons who had been recently vaccinated, with the exception of one additional case not included in the above mentioned cases and to which I shall call your attention later.

As all of these cases were of a severe type, several proving fatal, and as I am in great doubt as to how to properly classify them, I have thought it might be of interest to the members of this Association to report these cases.

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Some of the persons afflicted applied for treatment at the O. P. D. of the hospital, but owing to the condition in which I found them I recommended them at once for admission into the hospital wards. The others applied for admission to the admitting physician, but in both cases they passed into the care of the hospital physicians, and it is to the courtesy of these gentlemen that I am now able to report these cases.

Owing to the short time at my disposal for reading this paper and to the number of cases I have to report, I shall not enter largely into a detailed account of each case, but shall endeavor as briefly as possible to present to you the especial points of interest in each of them, and in a final summing up of the cases to call your attention to the especial features common to them all.

Case I. A man 43 years of age, with a good family and personal history with the exception of being addicted to alcohol, was admitted to the hospital on January 10, 1902. This man was vaccinated six months before admission to the hospital by an officer from the Board of Health. Two weeks after vaccination his left arm became rather sore, and two large reddish areas appeared on the site of the vaccination. A day or two later these reddened areas were each covered with a bleb the size of a ten-cent piece. Whether this was the result of a successful vaccination or not I am unable to say, but such is the patient's own story. Twelve days before, or a little more than four weeks after he was vaccinated, all soreness in the arms having in the meantime disappeared, crops of bullæ, varying in size from a split pea to a quarter of a dollar, began to appear on the face and scalp, also in the axillæ, the inner aspects of the thighs, and on the back and abdominal walls. Blisters also appeared on the inner surfaces of the eyelids and in the mouth and throat. At the time of admission the chest and back was nearly covered with a bullous eruption, some of the bullæ being surrounded with a pinkish areola. Many of the bullæ are discrete, but on the lower anterior part of the neck, on the left upper arm, on nearly the whole of the back and about the hips, many of the bullæ have become confluent and broken down, and these areas are macerated and sore. The scalp is covered with bloody crusts, both eyes are closed, swollen and crusted, and a purulent secretion bathes the lids. There was no pain or itching. There were discrete bullæ, varying in size from a quarter to a half dollar, scattered here and there over the lower extremities. The temperature was at this time 103°. On the 14th of January, two days after admission, a few

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new bullæ had formed, the condition of the eyes was somewhat improved, but there was great difficulty in swallowing. On the 18th, four days later, the condition was about the same, but the skin lesions seemed to be drying up and no new bullæ had formed. On the 22d the skin lesions were still improving, but his general condition was worse and he was steadily growing weaker. His breathing was rapid and difficult, and, as he was unable to swallow even liquids, nutrient enemata were given. Death occurred suddenly at eleven P. M. The autopsy revealed, in addition to the extensive lesions of the skin, gangrene of the left lower lobe of the lung and an acute lobar pneumonia of the same lobe; broncho pneumonia of the left upper lobe of the right lung; acute bronchitis, tracheitis, laryngitis and pharyngitis; acute gastritis; acute splenitis and an acute fibrinous pleuritis of the left side.

Case II. J. B., male, aged 33, admitted to hospital January 11. Family history, good; personal history, always well. Uses alcohol moderately. Was vaccinated seven weeks ago. The scar does not indicate that the vaccination was successful, and arm has not been sore. One week ago, or six weeks after vaccination, patient noticed small water blisters around site of vaccination. These blisters increased in size, spread over the arm and finally all over the body. On admission the temperature was 100°. The man coughs occasionally, the expectoration consisting of mucus mixed with pus and shreds of epithelium and streaked with blood. On the backs of hands and feet are numerous bullæ, mostly discrete, varying in size from a split pea to a ten-cent piece, many of them having a narrow red areola. Between these lesions are a few scattered macules the size of a hemp seed. Over the inner aspect of the thighs and forearms are fewer but larger bullæ, some firm and tense and others flaccid. Over the upper and outer aspect of the left arm, all over the back and upper part of the abdomen and lower part of the chest are large weeping areas covered with loose macerated skin. There are also a dozen or more bullæ on the genitalia. About the nose, mouth and chin are thick, almost black, crusts, while the scalp is likewise crusted, evidently with the contents of broken-down bullæ. The roof of the mouth and inner surface of the cheeks contain in all half a dozen bullæ about the size of a ten-cent piece. The whole of the pharynx, the pillar of the fauces and sides of the uvula are covered by a thick yellow coat of pus which is easily scraped off. Owing to the condition of the patient no further physical examination could be made. Four days later the

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patient was much weaker. He had at times been delirious and his breathing was labored, though he took nourishment fairly well. Some new bullæ had appeared during this time, though in a general way the condition of the skin was about the same. For the next two days the patient was delirious most of the time and slept very little. He could take no nourishment and was rapidly growing weaker. On the 18th, seven days after admission, the patient died, having been unconscious for the last twelve hours of his life, during which time the breathing was very labored, accompanied by tracheal rales. On the 17th, one day before death, he had a well-marked chill at two in the morning and two in the afternoon. The temperature reached 103°, its highest point, three days after admission. No autopsy was allowed.

Case III. Mary B., aged 40. Family and personal history not obtained. Six weeks before admission was vaccinated. Her arm was never sore and was practically healed in three weeks. About this time a few small discrete blisters appeared on the front of the neck. These gradually spread down on the chest into the axillæ, downward along the arms, around the neck, over the shoulders and back. These vesicular lesions increased in size became confluent and ruptured. Three weeks after the first vesicular lesions appeared the patient was admitted to the hospital, having been confined to the bed two weeks previously, during which time she had had two severe chills. Temperature at admission was 101½°. Patient has great difficulty in swallowing and complains of weakness. On examination the scalp is found covered with thick yellowish crusts. On the left forehead is a single flattened bulla, half an inch in diameter, with cloudy contents and no surrounding areola. The rest of the face is clear. In the axillæ and groins and on various other parts of the body are excoriated areas of varying shapes and irregular outlines, the largest covering an area of 5x8 inches. The floor of these areas is smooth, clean and flat, showing a tendency to granulate, and there is no inflammatory reaction about these areas, the surrounding skin appearing healthy. On the lower extremities, back and front, there are perhaps half a dozen discrete bullæ about the size of a ten-cent piece, half distended with cloudy serum. There are also a few of these small bullæ on the arms. None of these bullæ have an areola. I was fortunately able to get a good photograph of this woman's back before death, and two of the body after death, and to save time I will not describe the appearances of these lesions further, but will show you the photographs, which I think speak for themselves. No further physical examination could

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be made on account of the patient's condition. For a few hours after entrance, the patient appeared quite comfortable and took nourishment fairly well, but she suddenly became much weaker, her extremities grew cold, the pulse weaker, and she became cyanotic, dying at 3 P. M., about ten hours after admission. On autopsy, the soft palate, sides of pharynx, epiglottis and the mucosa of the larynx was found thickly studded with small round ulcers. Each one presents a clean bright red base with red margins. Upon the under surface of the epiglottis these ulcers average about 2 mm. in diameter. They are in general discrete, though frequently confluent, forming irregular figures rendered conspicuous by considerable injection of their bases and margins. The process in the larynx and trachea is similar. It has advanced further here, and large areas practically devoid of epithelium are seen covered with thick yellow-gray mucus, which in places is membrane-like and thickly adherent. The same process extends to the larger bronchi, becoming more marked as we descend. The vagina shows numerous lesions similar to these found in the larynx. The anatomical diagnosis, in addition to the skin lesions, may be summed up as follows: Ulcerations of the mouth, larynx, trachea, bronchi and vagina; focal pneumonia, acute bronchitis and chronic fibrous pleuritis of both sides.

Case IV. Admitted January 21, 1902. Male, aged 21. Family and personal history good. Was vaccinated six weeks previous to admission to hospital, the area of vaccination being healed in about three weeks. Two days ago, or about four and a half weeks after vaccination, a few small blisters appeared on back of neck, also on right outer thigh near buttocks. These blisters rapidly increased in size and numbers and spread downward on back, shoulders and arms to the hands, also over chest and abdomen. Gradually both buttocks became involved, and a little later both thighs and the legs and feet. These blisters varied in size from a ten-cent piece to a silver dollar, were ruptured easily, and when ruptured left a tender, excoriated surface. The patient has a good appetite, sleeps fairly well, and says the eruption itches slightly at times, though he refrains from scratching. Physical examination discloses a man well developed and nourished. On posterior portion of hard palate is an irregular-shaped red area, slightly raised, but without vesiculation. Pulse regular; temperature 99 3-5°; heart regular; lungs not examined, no further physical examination being made on account of thickly arranged skin lesions. Scalp clean. Forehead shows on either side irregular areas

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of redness with considerable crusting. The same condition exists on chin. On neck, front of body, arms and legs may be seen irregularly distributed bullæ, varying in size from a pea to a pigeon's egg. The bullæ are very thickly distributed, tense, and nearly all circular in outline. These bullæ are both discrete and confluent, all have sharply defined red areolæ, and some, especially on the arms and legs, are distinctly umbilicated, and when broken, evacuate a deep yellow clear serum. The palms of hands and soles of feet are clear. Irregularly distributed over the body are areas (the sites of broken-down bullæ) both discrete and confluent, red, slightly elevated, sharply marginated and moist. The intrascapular region and back of neck is one mass of these latter lesions, as are also the buttocks, but on the nates there are thick crusts. The penis is quite covered with small bullæ the size of a pea.

The temperature at admission was 100°. Two days later, or the night of the 23d, the temperature was 103 3-5°, the highest point it reached during the course of the disease. On the 29th, eight days after admission to the hospital, nearly all the bullæ had ruptured, and here and there were small scattered areas of clean granulation tissue and many small areas of new epithelium scattered throughout. The back of chest was dry and scaly, many portions having healed, leaving slight brown pigmentation. The patient sleeps very little and is slightly delirious at times. There are no lesions in the mouth. Two days later, on February 1st, new crops of bullæ appeared on thighs and other parts of body previously affected excepting the back and buttocks. On the forehead over the healed areas a few small clear bullæ appeared with slightly reddened areolæ. On front of body are the remains of old lesions which are slightly thickened, pale red in color, entirely covered with new epidermis. Around the edges of these areas are numerous small discrete bullæ, an occasional vesicle being seen in the center of the patches. By February 5 all bullæ and vesicles had disappeared, leaving the skin the same as before. Two days later, on the 7th, a new crop of bullæ appeared practically over the entire body. A week later, the 12th, the bullæ last appearing had entirely disappeared, and at this time there was scarcely a square inch of skin on the body, excepting the palms and soles, which had not been the seat of a bulla. On March 1st another crop of bullæ appeared, smaller in size than those previously noted and not nearly so numerous. On the 14th a few bullæ appeared again on the body, and this time the mucous membrane of the mouth and throat was invaded.

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These all broke down, and by the 20th the skin, save for remaining evidences of the bullæ in the form of partly healed excoriations, was in pretty good condition. Ten days later a few more bullæ appeared scattered over the body, and all were discrete. There were three more outbreaks of these bullous lesions, each one milder in type than its predecessor, and the patient was discharged practically well on May 5th, having been in the hospital four and one-half months.

Case V. Male, aged 35. This man was admitted on February 19th. Family history negative. Patient's history good, though he was a moderate drinker. Was vaccinated January 7th. One week ago, or about five and one-half weeks after vaccination, a few small blisters appeared about the lips, which itched and burned. The patient scratched these lesions, and similar lesions rapidly appeared on the rest of the body. He went to bed the next day and has remained there since. Two days before admission, blisters appeared in the mouth, causing considerable discomfort, rendering deglutition painful and difficult. Physical examination reveals a well developed and nourished negro. Respiration is slightly increased and temperature 103 1-5°. Upon the neck, head, eyebrows, eyelids, nose and ears, upon the flexor surfaces of elbows, about the clavicle and maxillæ, upon the shoulders, around the genitals, upon the flexor surfaces of thighs, and in the popliteal regions are seen bullæ for the most part unilocular but with a tendency to coalesce. They are filled, as a rule, with a transparent serous fluid, while the contents of some of them are cloudy, resembling thin pus. These lesions vary in size from a pea to a half dollar. In the flexures the lesions show a tendency to coalesce. There is a large excoriated oozing area just above the right clavicle and a similar one on the inner aspect of the left thigh. There are many bullæ on the back, especially about the buttocks and shoulders. There is some conjunctivitis with a sero-purulent discharge. An examination of the throat shows on the anterior part of the soft palate some broken-down bullæ, while similar lesions are to be seen on the posterior wall of the pharynx. On February 23d the patient was unable to swallow, owing to condition of the throat, and nutrient enemata were given. On February 27th the patient was much better; the lesions in the skin and in the mouth are clearing up. On March 3d there was still further improvement, but there are large, painful, excoriated areas in the axillæ and popliteal spaces, as well as inside the thighs. On March 12th his temperature, which had been for several days about 100°, ran up to 100½°, and bullæ appeared in the

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mouth and in the pillars of the fauces. The odor from the mouth was very foul. March 20th the lesions on the body had practically healed, with the exception of those in the axillæ and behind the knees. The condition of the mouth is much improved. On April 2d no bullæ could be seen, but there were some broken-down glands in the right axilla, and he still has an ulceration in the right side of his mouth. April 20th the patient was out of doors daily, and the mouth is practically all healed. He was discharged well on April 28th.

Case VI. Male, aged 47, was admitted to the hospital March 30th. No family history. Patient has always been well and strong, and uses alcohol moderately. Was vaccinated six weeks ago; twenty days after vaccination he had a swelling of lower jaw, accompanied by neuralgia. Says he has no teeth on that side to cause trouble. A week later, or four weeks after vacciation, small blisters began to appear on the forehead. From here the trouble spread to the face, neck and shoulders two or three days after their first appearance on the forehead. Has had sores in the mouth for the past two weeks. The disease spread, according to the patient's story, rapidly all over the body from the shoulders, some of the blisters being very large before they were broken down by the pressure of his clothing.

Physical examination reveals a poorly developed and badly nourished man. Temperature 101 3-5°. On inside of cheeks are small denuded areas, though none can be seen in the pharynx. Teeth are very poor and loose, and gums are of a grayish color and spongy. An examination shows crusts and small excoriated areas about the eyes, over the body and extremities, about the neck, above the clavicles, on the maxillæ; in fold of buttocks and flexures of knees are large denuded areas, some of which have extended through the skin into the fleshy parts. These areas vary considerably in size, the largest being in the axillæ and above the right clavicle, while the deepest are in the flexures of the knees and the folds of the buttocks. No fresh bullæ can be seen. Scattered over legs and forearms and on various parts of the body are small areas which have nearly healed. The heart, lungs and abdomen are negative on superficial examination. April 2d patient is very uncomfortable. The eyes are painful, and lids are glued together by a muco-purulent secretion. The throat is very sore and the vocal cords are evidently affected, as patient can scarcely whisper. Nutrient enemata are taken well and retained. Sleeps very little and is very weak. April 4th, five days after admission, he is growing weaker fast, failing to respond to stimulation.

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For the past four days the morning and evening temperature has been sub-normal. The patient died at 11:30 P. M., and no autopsy was allowed.

Case VII. Admitted to the hospital March 26th. Male, aged 27 years. Family history good. Patient has always been well. Was vaccinated five weeks ago; arm was slightly sore for several days, but patient was told it did not take. One week ago, or four weeks after vaccination, a few small blisters appeared on chest; three days later blisters increased on the chest and made their appearance on the pubes and penis and inner aspect of both thighs. These lesions itched slightly. Says he has had three chills during the past two or three days; feels hot and very thirsty; there is no vomiting or sweating. Patient says it hurts him to swallow, but his mouth is not sore.

Physical examination reveals a well-developed and well-nourished man. Pulse is fairly regular, with good volume and tension; temperature 101½°; heart area within normal limits, its action being regular and sounds clear, no murmurs being heard; resonance of the lungs is good throughout; respiration is slightly harsh at both apices behind, otherwise good; no rales heard. Scattered over the whole surface of chest and abdomen are many circular excoriated areas of all sizes from a split pea to a ten-cent piece. Among these areas are some small bullæ, most of them about the size of a dime, unilocular and umbilicated; some small bullæ scattered over the cheeks, about pubes, root of the penis and inner aspect of both thighs, and many excoriated areas, with small bullæ scattered among them. There are several large bullæ, one or two of them the size of a half dollar on thighs and lower legs. There are excoriated areas at angle of neck with body. There are no lesions on the back or about the eyes; no conjunctivitis.

Four days later patient complains of his mouth, which he says is very sore. Examination of the mouth reveals bullæ the size of a ten-cent piece, several in number, situated on the inner side of the cheeks and the walls of the pharynx.

Three days later many small bullæ have appeared in the flexures of the elbow, also in the axillæ. Those in the axillæ are closely grouped and cover an area the size of the palm of the hand. Mouth is ulcerated and he has considerable difficulty in talking and swallowing. Patient has had steady diarrhœa for the past three days, and the stools contain dark clotted blood.

The next day lesions and flexures of elbows and axillæ had coal-

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esced to some extent, and new bullæ had appeared the size of a half dollar.

April 5th there are severe but not very deep ulcerations just inside both lips. There is a deep ulceration in the angle of the left lip on the inside, running back as far as can be seen. Owing to the difficulty in swallowing food, patient has been fed for the last three days by the rectum, but there is so much diarrhœa this has had to be stopped.

April 6th, stools still contain blood clots. Mouth is much worse and lips more swollen than at last note. Patient sleeps very poorly and seems to be growing weaker.

April 10th, mouth is so sore that nutrient enemata have been resumed for the past three days. Some food is still taken by the mouth, and bloody stools still continue.

April 14th, mouth gradually growing better; diarrhœa is checked. Patient is much stronger and better; can talk now with very little difficulty and takes all food by mouth.

April 18th, general condition greatly improved; eats and sleeps well; bowels normal.

April 22d, up in chair wrapped in blankets; still some ulceration in mouth, but this condition is much improved.

April 26th, mouth is almost healed. Complains of pain in perinæum, and examination reveals an abscess.

May 1st, mouth contains a few small ulcerations, lesions on body being entirely healed. There is a glandular swelling in the middle of the left arm and small abscess on left thigh. At this time the patient was transferred to the surgical wards, where he made an uneventful recovery.

Case VIII. Male, aged 52 years, admitted April 9th. Family history negative; patient's history good, excepting that he uses alcohol to excess. Was vaccinated December 15th; arm was quite sore for two weeks, and was told by his doctor that he had a very good take. On the second week in March small vesicles appeared on the forehead; two days later blisters began to appear on the neck and shoulders, on the pubes and between the thighs. These rapidly became larger and broke of themselves, to fill up again according to the patient's statement.

Four days later the disease rapidly spread all over the legs and appeared on the arms. Some itching at first stage of the disease, but little or none since. Mouth is not sore, and he complains of pain only when lying on the excoriated surfaces.

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Physical examination reveals a well-developed and well-nourished man. Face is reddened, with some crusts scattered over it. Over the body are scattered large bullæ, varying in size from a ten-cent piece to a dollar, with clear serous contents. These bullæ are especially numerous on the extremities, below the elbows and mid-thighs, where in many places they have coalesced. There are also some crusts the size of a quarter scattered over the body. The middle of the back and buttocks are almost denuded of epithelium and much reddened. There are minute vesicles inside the lower lip, with clouded contents.

April 13th. Since second day after admission bowels have been loose and the discharges contain dark masses of clotted blood. Since entrance perhaps a dozen or fifteen large bullæ the size of a half dollar have appeared on various parts of the body. There are no lesions in mouth or throat. While taking a bath today the patient collapsed and was carried back to bed unconscious, but was revived with stimulants.

April 15th, bloody stools continue; lesions on body have been healing rapidly, and there is no evidence of any new ones. His appetite has been good the past two days, and there has been no further vomiting. Patient was apparently perfectly comfortable on the afternoon of this day, when he suddenly collapsed and died.

Autopsy reveals acute bronchitis, broncho-pneumonia, diphtheritic colitis, and proctitis, interstitial hepatitis and edema and congestion of the brain.

Case IX. Admitted April 30th. Male, aged 33. Family history negative; patient's history good, but uses alcohol in moderation. Was vaccinated six weeks ago. Three days before admission noticed slight itching between the shoulder blades. On examination found group of blisters on the back, perhaps 20 or 30 in number; that night awoke with itching about privates. On examination found 50 or more small blisters about the size of a split pea. There has been considerable discomfort from itching.

Physical examination reveals a well developed and nourished man, but he is undoubtedly addicted to the excessive use of alcohol. The eyelids are closed and much swollen, and the lids are glued together with thick purulent discharge. On eversion of the lids there are revealed several small ulcers about the size of a split pea. On the back of the neck and across the shoulders, closely grouped, are about 50 bullæ varying in size from a split pea to a quarter of a dollar, some of them having hemorrhagic contents. The same condition of affairs exists across the front of the chest. In both axillæ there are 25 or

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30 bullæ about the size of a ten-cent piece; on the inner aspects of both thighs, extending down nearly to the knee, are large groups of bullæ varying in size from a split pea to a quarter of a dollar; there are numerous bullæ of various sizes scattered over the arms and lower legs. The symmetrical arrangement of the eruption is quite marked, the regions affected being the space across from shoulder to shoulder behind, from shoulder to shoulder in front, the axillæ, the inner aspects of both thighs and the popliteal spaces behind.

On May 3d the process has extended very rapidly since admission: the entire trunk is now covered with bullæ varying in size from a split pea to a silver dollar. Many of the lesions have ruptured, particularly on the shoulders and back.

May 7th, all the bullæ have broken and the entire abdomen is covered with excoriations, as are also the hips, shoulders and back, the surface being raw and oozing. In the mouth, between the lower lip and gum, are two or three small patches of denuded mucous membrane. Patient has been able to eat fairly well.

May 10th, skin on the whole trunk and thighs is practically denuded of epithelium, bleeding and very painful. No new bullæ have appeared.

May 18th, all bullæ have entirely disappeared, but there are many raw areas, especially about the upper arms, axillæ and buttocks. These areas are clean, and epithelium is fast filling in.

May 22d, still large denuded areas on inner sides of arms; less extensive ones on shoulders and buttocks; sitting up today in chair, wrapped in blankets.

May 27th, denuded areas are almost entirely healed, excepting a small patch on the inner side of both arms and right hip. Patient was discharged relieved.

Case X. Male, aged 47 years. Admitted January 9th. Family and patient's history not obtained, though the man was undoubtedly very much addicted to the use of alcohol.

Physical examination reveals slight glandular enlargement of the neck, marked on right side; pupils equal; react normally to light and accommodation; conjunctivæ and cornæ injected; purulent discharge from both eyes; lips thickened and cracked; mucous membrane of mouth pale; tonsils swollen and congested, also injected, as is uvula; there is a small patch of membrane on each tonsil and on back of uvula; a few sibilant rales in both lungs.

Culture taken from the throat reveals the presence of diphtheritic bacilli. The skin is covered with bullæ of various sizes, the largest

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being the size of a silver dollar; these bullæ are larger and more profuse on the body and lower extremities; some have been broken and leave raw, red, excoriated areas. Some of the excoriated areas present are beginning to heal. This patient was vaccinated, probably successfully, eight weeks ago.

January 10th, patient has much tremor of the muscles and is at times delirious. Several new bullæ have appeared, from the size of a ten-cent piece to a silver dollar. These bullæ are easily ruptured, leaving a moist excoriation, and the odor of the exudation is extremely unpleasant. Antitoxin was administered today.

January 11th, patient seems to grow much worse; is more delirious; has a tendency to fight and rejects all nourishment.

January 12th, patient did not sleep at all last night and grew rapidly worse in spite of care and treatment. Patient was extremely violent during the night and died at 8:30 in the morning from a septic condition of the lungs, due probably to the skin lesions. No autopsy was allowed.

I regret that the large number of these cases I have had to report and the length of time given by this society for the reading of a paper has made it impossible to describe these cases more fully. Such a description of them as I have given is totally inadequate to present to you a true clinical picture of the disease. To sum up these cases briefly, I may say that they were all cases of bullous dermatitis, all but one occurring in patients who had been recently vaccinated. The average duration of the disease in these 10 cases was six weeks from the time the first skin lesions appeared until death or recovery took place. The longest duration of the disease in any one case was 16 weeks, followed by recovery, and the shortest was one week, followed by death. The skin lesions began to appear in these cases in an average of five weeks after vaccination, 16 weeks having elapsed in one case, the longest, and three weeks in one case, the shortest time, between the time of vaccination and the first cutaneous disturbance. In the 10 cases which followed vaccination there were six deaths, a most extraordinary mortality. In all the cases the parts most often affected were the back of the neck, the region between the shoulders, the axillæ, the buttocks and the inner aspect of the thighs, and in these places there was a noticeable grouping of bullæ. The odor in all the cases was intensely disagreeable, but subjective symptoms were practically absent, though the extensive excoriated areas made all movement painful. The lesions in the mouth and pharynx made deglutition

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painful and often impossible, while corresponding lesions in the trachea produced an aggravating cough.

There are several questions which naturally arise in regard to these cases: What was the cause of the disease? Was it the result of vaccination? Was it the result of infectious material introduced at the time of vaccination? Was it the result of infectious material introduced into the vaccination wound after vaccination, and what name should be given to these cases? As to the cause of the disease I am not prepared to give any decided answer. Was it the result of vaccination? It seems curious that there was apparently an average incubation period, as we might call it, of five weeks from the time of vaccination to the appearance of the skin lesions. In no one of these cases was there any lymphangeitis or any signs of sepsis, and the scar resulting from the introduction of the vaccine virus gave evidence that only one or possibly two of the cases had produced immunity from smallpox. So far as could be learned, animal lymph was used in all these cases, and it undoubtedly came from a trustworthy source, and with possibly one or two exceptions the vaccination was done by physicians appointed by the Boston Board of Health. Bowen some years ago published an interesting series of cases of bullous dermititis following vaccination; but these cases occurred in children and none of them were fatal, and the trunk as a rule was free from the bullous eruption, while in all of these cases the trunk was markedly affected. In his cases there was an apparent incubation period, if we may call it so, for two and one-half weeks, while in these cases I report it is double that length of time,—i. e., five weeks. The constitutional disturbance in his cases was trivial, while in these cases of mine it was very marked, the average temperature of these cases while they lasted being in the evening about 101°. In Bowen's cases he says, in summing up, that "It is not improbable that a toxine developed by the vaccination in certain predisposed individuals is responsible for the cutaneous appearances." Was this disease the result of infectious material introduced at or after vaccination? While there is no scientific proof of such an assertion, I am of the opinion that such was perhaps the case. Why is not such an assumption plausible in the face of such grave constitutional and cutaneous symptoms and a record of six deaths in ten cases? Lastly, what name shall we give to these cases? For many reasons I should not call them cases of Dermatitis Herpeteformis. On the other hand, it might seem more proper to call them, perhaps, cases of Pemphigus. Quoting Duhring in regard to

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Pemphigus, I will refer to the following: "The mucous membranes of the mouth, pharynx, epiglottis, arytenoid cartilages, trachea, bronchi, vulva, anus, and even of the alimentary canal are not infrequently invaded, especially in the varieties malignus and vegetans, giving rise to varied local lesions, mostly whitish patches and excoriations. In grave cases there are pain and difficulty in breathing and swallowing, diarrhoea, exhaustion, collapse, and a fatal ending." These cases of mine certainly showed all these symptoms. I present this brief outline of these cases only as a preliminary report, intending in the near future to report and discuss them in full.

DISCUSSION.

DR. DUHRING, of Philadelphia.—I have listened with much interest to Dr. Howe's paper, because I think it is a very important one from a practical standpoint, and upon a subject which is not well understood by the profession at large. We, who practice cutaneous medicine, see cases of this kind from time to time, although I myself have seen comparatively few. I believe that by reporting cases of this character and discussing them, we shall aid the whole subject of vaccination and its results, and bring forward certain facts which are not yet as well established in the mind of the profession as they should be. I am quite in accord with the statement made by the reader of the paper that effects of this kind and other kinds may be produced by vaccination. I certainly have seen some remarkable exhibitions following vaccination, at brief or longer intervals. I think the reader of the paper has brought forward the subject in a proper manner, and has emphasized the point of importance in connection with the cases that came under his observation. What strikes me particularly is the fact that the cutaneous manifestations in this series of cases were all much alike; they were of the bullous type and similar in most respects. The fact, in my opinion, was not sufficiently emphasized that the cutaneous manifestations were merely one expression of a general disturbed condition of health. The reader called attention to the fact that the internal organs were generally affected, all of which goes to prove that the skin, in this series of cases, was but one manifestation of a general and, I think, septic condition. We must grant, I think, in the light of the history of these cases, and what we know of other similar cases, that they are the direct or indirect result of vaccination. While we hear a good deal, *pro* and *con* about vaccination, of its injurious results on the part of those who are opposed to it and of its value on the part of those who favor it, I have always felt that those who are opposed to vaccination, or rather those who have brought forward the possible ill-effects of vaccination, did not in some instances have a fair hearing. I myself have seen cases at least similar to the ones reported by Dr. Howe, as well as others where the local and constitutional manifestations were undoubtedly the result of vaccination. I wish to state, however, that I have seen similar manifestations produced by other

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causes than vaccination, and this brings up a general subject, and one which is strongly impressed upon my mind, namely, that the same cutaneous manifestations may be produced by various causes. This fact is being more generally recognized from year to year—more so than it was twenty-five or thirty years ago.

The long incubation period in Dr. Howe's cases, from four to six weeks, is singular, but we recognize that this may be the case and it is no argument against the assumption that the manifestations were due directly or indirectly to vaccination. I am inclined to think that the virus which induced these symptoms was introduced at the time of vaccination, and was not a subsequent infection. The reader of the paper referred to a series of cases which was reported some years ago by Dr. Bowen, and called attention to certain differences between those cases and his own. I think the difference in the symptoms may perhaps be accounted for by the fact that Dr. Bowen's cases occurred in infants and children, while Dr. Howe's patients were all adults. Most of us will admit that the same cutaneous disease may run a certain course in the child, and an entirely different course in the adult; what may run a mild course in children may prove fatal in the adult. That is true of pemphigus.

Now, how shall we designate this form of disease? I do not regard this as a matter of great importance. I think Dr. Howe has acted wisely in selecting the title he has and connecting it with vaccination, because it is to that point that we wish to call attention, namely, that instances of bullous dermatitis, often severe and even running a fatal course, do at times follow vaccination. I think, therefore, that the term may stand for the present, and perhaps it would be well not to give another designation to the disease. That it is closely allied to what is known as semi-malignant or malignant pemphigus, I think probable, but whether we call it bullous dermatitis from vaccination, or pemphigus from vaccination, or malignant pemphigus, matters very little at the present period. From the photographs exhibited one could hardly tell whether it was a case of bullous dermatitis from vaccination or one of semi-malignant pemphigus.

Dr. Zeisler, of Chicago.—I would like to continue this discussion along the line of thought suggested by Dr. Duhring. I agree entirely with Dr. Duhring that it is wise on the part of Dr. Howe and other contributors who have observed this class of cases to give the affection only a provisional name. It is better to do this than to attempt to force this clinical picture into any well recognized type. I did not particularly relish the attempt to place it in the pemphigus class. I would rather see the two remain separate, because I do not believe there is any further relationship between them besides the bullous lesions on the skin, which is but a banal expression. I would rather see it placed in the class of the toxic erythrodermies. I certainly can see no relation between Dr. Howe's cases and dermatitis herpetiformis.

Dr. Bronson, of New York.—The class of cases reported in Dr. Howe's paper is extremely rare and interesting, but I do not think there is sufficient

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evidence that vaccination, *per se*, is accountable for the disease. Though all these cases seem to have followed vaccination, there is every reason to believe that it was not the vaccine virus proper that caused them, but rather some accidental and exceptional factor, such as perhaps an admixture with the vaccine virus of some peculiar septic material.

As to the character of the disease, it is difficult, perhaps, to classify. It is closely analogous to pemphigus, but differs from it in its acuteness, in the constitutional symptoms and the tendency to suppuration. Some of the photographs shown by Dr. Howe suggest impetigo herpetiformis, especially in the peripheral extension of some of the lesions. I judge, however, that there was very much less suppuration in these cases than in that disease. The disease was certainly a systemic one and probably of a septic nature.

Dr. Ravogli, of Cincinnati.—I agree perfectly with the idea expressed by Dr. Bronson, that vaccination, *per se*, cannot be held accountable for this disease. It is only responsible to the extent of any other form of trauma which leaves the door open for infectious germs, which may explode and produce these infections. These cases are, in a certain sense, closely allied to pemphigus neonatorum, where we find pretty nearly the same condition; that is, enormous bullæ, with the skin falling off in shreds. These lesions have been traced to a staphylococcic infection. I have had several cases of pemphigus neonatorum occurring in the practice of midwives who, suffering from a dermatitis of the fingers, had infected the children during delivery.

I have had several cases of bullous eruption following vaccination, and one of these patients died with the same symptoms as described by Dr. Howe—that is, symptoms of septicæmia. Several other children have recovered, but bullæ continued to form for one and even two months, the lesions covering the arms, legs and body. I do not think that vaccination, as vaccination, is responsible for these cases, excepting to the extent that we have produced a trauma which affords a means of entrance to these malignant germs, which subsequently produce infection.

Dr. Bowen, of Boston.—As regards the cases of bullous dermatitis in children following vaccination that I reported a year or two ago, I have seen two additional cases this year, making eight in all. The last two tallied quite closely with those I reported before. One of the former series I hope to show during the morning session on Saturday. The type of the disease in the case is severe, having persisted for five years.

With regard to the difference between the cases I reported and those described by Dr. Howe, it seems to me to be more pronounced than one could account for by the difference in the age of the patients. Dr. Howe's cases had the appearance of an epidemic, all having occurred during the past year. So far as we know, similar cases never occurred here before. My cases were stretched out over a period of five years or six years, the first one occurring in 1895. The disease occurred in children and the eruption showed marked points of predilection, such as the mouth, nose, wrists and ankles. None of my cases died. They had no rise of temperature nor severe systemic disturbance. The mucous membranes were never affected, and in this they

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formed a strong contrast to the severe forms of pemphigus or bullous dermatitis. My cases differed so materially from those described by Dr. Howe that it does not seem to be probable that they were the result of the same infective agent. I have no further light to throw upon this subject. The cases reported by Dr. Howe are as inexplicable to me as were my own. In his cases, however, the theory of some septic inoculation is more probable than in mine.

Dr. Stelwagon, of Philadelphia.—In pemphigus we have a certain symptomatology, and the cases described by Dr. Howe correspond to that. They all conformed to the bullous type of eruption. If the infection occurs in these cases simply owing to the opening or break in the tissues giving opportunity to subsequent accidental entrance of the causative germs, then we should also see such examples following ordinary cuts and abrasions, which we all know is not the fact. I think we can feel fairly confident, therefore, that the germs of the infection were introduced with the vaccine virus. I recently saw an article by Bulloch and Pernet, in the *British Journal of Dermatology*, in which the writers reported a number of cases of acute pemphigus occurring in persons who handled animal products, and it occurs to me that in the cases described by Dr. Howe the infecting material might have been accidentally obtained from the animals from which the vaccine was procured.

Dr. C. J. White, of Boston.—In one of these cases which we had at the Massachusetts General Hospital, the lesions were distinctly erythematous in character, suggesting strongly erythema multiforme. Where bullæ existed the chambers were so flat that there was scarcely any fluid in them at all.

Dr. J. C. White, of Boston.—I have seen two of these cases. One of them, as my son stated, was distinctly erythematous. When the patient entered the hospital he was apparently not seriously affected. There was an eruption about the axillæ and pubes, which subsequently became universal, and although bullæ did appear, they were not very full. Some of them appeared on parts of the skin where there had been no previous erythema, but they were generally preceded by an erythematous stage. During the later phases of the affection—the last two days—all these bullous areas became excoriated and he exhibited large denudations of skin, from which the fluids of the skin were flowing freely. He died, and the pathological changes were similar to those described by Dr. Howe. The other case which came under my observation ran a similar course to this one, but whether it ended fatally or not I do not know, as the patient disappeared.

This entire series of ten cases is extremely interesting, and wholly unlike any experience of mine in many years. In the first place, these persons were recently vaccinated, and I do not doubt that these symptoms arose from some virus which was inserted at the time of vaccination. It was derived not from one source, but probably from many sources. The number in which these symptoms occurred of course represents but a very small percentage of the persons vaccinated. One of the most extraordinary features of these cases is the long period of latency. In some of them the symptoms did not develop

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until nearly two months after vaccination, and then ran a rapid and severe course. I have no doubt that the cause of the symptoms was a virus introduced at the time of vaccination.

As regards the classification of these cases, I agree with the statement made that we must have a descriptive title. They are examples of a dermatitis of an erythematous, bullous type, chiefly bullous. I do not think the eruption is anything like ordinary pemphigus. All the cases were in adults, while in Dr. Bowen's cases the patients were children and in none of them did the disease terminate fatally. It appears to me that if the infection in these two series of cases were the same, the disease would run a more rapid and severe course in children than in adults, as the powers of resistance are greater in the latter than the former.

Dr. Hyde, of Chicago.—While I agree with what has been said regarding the extraordinary character of the cases described by Dr. Howe, I should be sorry to have it appear in the transactions of this Association that it is the opinion of its members that the symptoms were the result of vaccination. I think we all agree with Dr. Bronson and the last speaker that some germ must have been introduced, most probably at the time of vaccination. This germ, apparently, had an extraordinarily long period of incubation, which, in part, may account for its effects; but none of the speakers, so far as I can remember, has laid any stress upon the character of the soil in which this germ was implanted. Dr. Howe, in describing his cases, stated that several of the patients were distinctly alcoholic, while in regard to others, he said, their habits were not known. In reply to what Dr. White has just said in regard to the increased powers of resistance in adult life, I would say that this rule does not apply to an adult whose powers of resistance have been impaired by chronic alcoholism.

To those who believe that the symptoms described by Dr. Howe were the result of vaccination, I would say that I have seen, and others have seen, cases where almost identical symptoms occurred in patients who had no previous record of vaccination. The fact should also be borne in mind that an enormous number of persons were vaccinated in Boston during the period in which these rare symptoms developed, and that only a very few subjects of vaccination betrayed these symptoms. I think the inference is perfectly clear that the germ which produced these rare lesions, and which may have been introduced at the time of vaccination, has no essential connection with vaccine virus, but was an accidental organism, which found a congenial soil in patients whose powers of resistance had been weakened by chronic alcoholism.

Dr. Corlett, of Cleveland.—I feel grateful to the reader of the paper for the careful record of cases together with the information he has given us upon this subject. I have been at a loss on several occasions as to where to place this special form of bullous dermatitis. A few years ago, when our soldiers returned from Cuba, I had an opportunity to observe a form of bullous eruption which seemed to me to conform to bullous impetigo, while in many respects it conformed to the description of cases as given by Dr. Howe to-day. In this series of cases the staphylococcus was found in all cases. In one case

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only was the streptococcus found. During the past year three cases have entered the Lakeside Hospital which conformed in clinical appearance to a group I have been unable to classify satisfactorily. All of these patients were adults: all of them belonged to the lower walks of life; two ended fatally and the third was taken away from the hospital by his friends and it was subsequently reported that he had recovered. The description of Dr. Howe corresponds precisely with each of these three cases, but in none of my cases was there any history of vaccination for many years previously. In all of my cases the mucous membranes were involved. In my first fatal case a post-mortem was refused. In the second case the only changes observed after death were the signs of a pneumonia.

It seems to me that vaccination may not be the only cause—if it be a cause—of this form of dermatitis. The only case that has come under my observation in which the symptoms were associated with vaccination was that of a boy about sixteen years of age; in this case, elsewhere reported, the lesions, which were bullous in character, appeared about three weeks after vaccination and conformed very closely to the cases described by Dr. Bowen.

In Cleveland at the present time, the Health Department—if it can be so called—has joined the ranks of the anti-vaccinationists, and for a time the public was regaled with—"How Cleveland was rid of small-pox." In this it was claimed that vaccination was followed by numerous and grave diseases, while fumigation with formaldehyde was all-powerful as a means of stamping out the plague. Naturally this gave rise to many arguments, for and against vaccination. We have, however, never seen a case, as described by Dr. Howe, following vaccination. In my own clinical experience I recall only one instance of an eruption following vaccination, and in that case the lesions conformed very closely to impetigo. It is a wonder, considering the lack of care used in vaccinating, that impetigo does not oftener follow vaccination.

Dr. Pusey, of Chicago.—I had the pleasure of seeing one of these cases last winter. As to what name we shall give them, I think that point is not of particular importance. Personally, I believe they belong in the same group with pemphigus and dermatitis herpetiformis. Several years ago I published a case which was intermediate in severity between these cases reported by Dr. Howe and the case reported recently by Dr. Bowen.

Dr. Fordyce, of New York.—It is possible that the cases reported by Dr. Howe were directly due to the vaccine virus implanted upon a soil that was very susceptible. We may have extremely malignant cases of smallpox, and again, the attack may be very benign. It is possible that bullous eruptions following vaccination may simply be due to the vaccine virus acting upon a person whose system is very susceptible to that particular poison. While these eruptions following vaccination may be accidental, it is my impression that they are due to an intensified action of the vaccine matter upon a susceptible individual.

Dr. Harding, of Boston.—The point brought out by Dr. Hyde regarding the possible connection between alcoholism and these infections following

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vaccination I think is worthy of consideration. I have seen one or two of these fatal cases, and in each instance the patients were distinctly alcoholic.

DR. D. W. MONTGOMERY, of San Francisco.—I have never seen any instances of disease like those described by Dr. Howe, but from the histories given I cannot help being struck by their similarity to the cases reported by Bulloch, Pernet and Hadley. These men reported two cases of bullous septicæmia, which they called acute pemphigus. I think in both instances the affection occurred in butchers, and followed wounds made with butcher-knives. Both ended in death, and a micro-organism, a diplococcus, was isolated in both. I believe the cases reported by Dr. Howe must be of a septic nature, and I am not willing to accept the theory that they were due merely to the introduction of vaccine virus.

DR. CARMICHAEL, of Washington.—I cannot throw any light upon these cases, but I am very much interested in the subject, because I saw two similar cases in the hospital last winter. One was in a negro woman who had not recently been vaccinated, and it ended fatally. We called it pemphigus for want of a better name. The other case was in a man who had been vaccinated about three weeks previous to the appearance of the eruption. He ran a high temperature, 103, 104, but ultimately he recovered. I saw him several weeks ago, when he had a relapse, but he seems to be getting on well.

DR. FOX, of New York.—I would not take up any more time to continue this discussion were it not for the fact that this subject is one of the highest importance. It seems to me that the question as to what these eruptions may be is of utter insignificance as compared to the question of whether they have any relation, direct or indirect, to vaccination. I do not think it has been adequately proven that these eruptions are associated with vaccination, and am very glad that Dr. Howe referred to his cases as merely occurring after vaccination and did not assert that they were caused by vaccination. Every case of bullous disease I have ever treated has probably occurred after vaccination—perhaps a long time after. It is to be noted that the eruptions reported by Dr. Howe appeared sometime after vaccination, four, six and even eight weeks. We know that during the past two years a wave of vaccination has swept over the entire country, and during that period I have seen an unusually large number of cases of pemphigus. I would not attribute these cases of pemphigus to vaccination, although some occurred a short time after. It is very possible, however, that vaccination is indirectly responsible for some bullous eruptions, as a toxic germ may find an entrance through the vaccination-wound. Still, there is no proof of this: we are not certain that it occurs, and it is a serious matter for us to make the assertion that vaccination is the direct cause of these eruptions, especially at this time, when the anti-vaccinationists are up in arms and seeking every opportunity to prejudice the public in their favor. Until we are certain that vaccination is the cause of these eruptions, we are doing ourselves an injustice, we are doing the Association an injustice, we are doing the profession at large an injury and affording aid and comfort to our enemies by making such an

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assertion. Dr. Johnson informs me that he received a communication from a gentleman asking the loan of the plates of Dr. Brown's article published in the *Journal* and was at the point of granting the request when he learned that the man was connected with the anti-vaccination league. This shows how active these people are, and I can assure you that anything we publish in our transactions will be used by them to the injury of the profession and the public.

Dr. Post, of Boston.—It seems to me that we should be very careful before we take it for granted that these eruptions were due to vaccination. Practically, everybody in Boston was vaccinated during the period in which these cases occurred, and it would have been impossible to find ten unvaccinated persons in the hospital where these patients were treated. Under such circumstances, if we attribute these cases to the effects of vaccination, we might just as reasonably attribute any unusual manifestations to that source. The average incubation period in these cases was five weeks and the extreme limits three and sixteen weeks, showing a very wide discrepancy indeed.

I wish to emphasize the above points because at a time when vaccination seems to be put on the defensive we should be very careful not to attribute injurious results to vaccination which cannot be positively traced to that source.

Dr. Howe (Closing the discussion).—In regard to the prominence of the alcoholic element in these cases, to which reference has been made, I would say that it was the opinion of the physicians who had direct charge of these cases that all but two were decidedly alcoholic. In one of the cases I had positive evidence that this was so, because when I showed him at a meeting of the Dermatological Club he was intoxicated.

Dr. Grover William Wende, of Buffalo, reported

A CASE OF EPIDERMOLYSIS BULLOSA HEREDITARIA, PRESENTING UNUSUAL FEATURES

Summary of Chief Points: The evidence of the hereditary or congenital formation of vesicles and blebs at points subject to traumatism and irritation; the marked infiltration of the skin after the lesions subside; the arrangement of the bullæ into concentric lesions; the decided changes in the nails; the lack of hirsute growth upon the scalp and the absence of eyebrows and eyelashes; the general tenuity of the skin: J. T., seven years old; born in Canada; first examined, September 23, 1901. Family History: The patient's father and mother are cousins, both being healthy. The grandparents are still alive and quite robust.

There is no history of syphilis, neurosis or skin disease of any kind

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FIG. 1.

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affecting any remote member of the family. There were four children in all; of these a brother younger than the patient died at the age of two months from acute bowel trouble. The third child appeared healthy at birth and remained so for almost a year, when a skin eruption showed itself about the mouth and anus, which finally spread to other parts of the body. The eruption gradually became more aggravated, with intervals of comparative relief. Under its influence the child continued to grow weaker; when at the age of two it died without other apparent cause. The fourth child was seemingly hale and vigorous.

PERSONAL HISTORY: The patient at birth seemed perfectly well and so continued for three weeks, when he had an attack of diarrhoea, simultaneously with which the skin began to redden about the anus and mouth, both becoming at first moist and afterwards scaly. The precise nature of this affection was difficult to determine. It continued, with variations in extent and form, until the patient had reached the age of three years, when he had an attack of cholera morbus, during the continuance of which there was a brief and complete remission of the skin manifestation. When it reappeared, the development of blisters was first noticed about the fingers, within the palms and upon the back of the hands. Similar lesions were developed upon the soles of the feet, specially involving the heels. There was a recurrence of the blebs about the hands and elsewhere. This state of affairs persisted until the commencement of the hot months, when there was almost complete remission in the affected parts; but, upon the return of cold weather, the disease again made its appearance not only upon the sites previously attacked, but also upon the knees. During the fourth, fifth and sixth summer the patient was comparatively, although never wholly, free from the complaint. The seizure during the past winter did not result, as usual, in cessation, but continued throughout the summer. Vesicles frequently were manifest on the tongue and the mucous membrane of the mouth.

The patient was born with his head well covered with dark hair which began to fall out immediately upon the advent of the eruption, occurring when he was three weeks old. At one year of age he was quite bald, while, at present, only a few straggling hairs, disseminated over the surface of the scalp, are discerned.

PRESENT STATE: The patient is a fairly well-developed boy for his age, and, barring the skin disease which prevents him from taking proper exercise, his general health is good. Upon examination no ap-

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parent change was found in the sensibility of the skin. The scalp shows, at present, but a few scattered lanugo hairs. The whole cutaneous structure is extremely thin. No evidence of bleb formation or inflammation of the scalp was ever discovered. It, however, shows a small pigmentary nævus covered with dark hairs. The eyebrows are merely indicated by scanty lanugo hairs, while the lashes are entirely wanting. A raw, shiny, elliptic area surrounds the mouth, which is denuded of skin and covered with fine scales, with the exception of the border, which is highly inflammatory; a condition perhaps aggravated by the fact that the patient continually wipes his mouth. An elevated red border encircles the nares, involving the bridge of the nose and extending over the right cheek, forming a half square, the advancing margin of which is of bright red, testifying to its more recent origin, while the rest of the area is scaly, demonstrating a more chronic state. The cavity of the mouth contains many erosions; on the mucous surfaces of the cheeks are two vesicles. The tongue shows no active lesions, but is smooth, bright-red and raw-looking at the center, having milk-white spots upon the edges. The breath is foul. The patient complains of pain accompanying mastication and deglutition, especially when eating highly seasoned food. Extending from the edges of the eyelids is an inflamed area covered with scales, which causes an irritation of the conjunctiva. A ciliary blepharitis is likewise present.

The forehead and cheeks are studded in an irregular manner by numerous milia of unusual size, with a tendency in certain localities to arrange themselves in groups. Upon compression the characteristic sebaceous matter follows.

The cutaneous surface in close proximity to the anus has an appearance similar to that about the mouth, but existing in a more marked degree. There is a scaly area about the junction of the skin and mucous membrane, the outer edges of which embrace a number of oblong lesions formed of raised epidermis and containing fluid. The penis shows like changes about the meatus, extending backwards and encompassing one-third of the organ; the affected parts are scaly, the color is but a few shades darker than normal, and the borders are well defined, with a slight erythematous formation which proves their recent origin. The back of the hands, the fingers and wrists are covered with large detached scales. The skin is greatly changed and very firm, but when moved the epidermis becomes grotesquely wrinkled. The affection stops abruptly and symmetrically just above the wrists. In appearance it resembles superficial serpiginous syphilide, due to the ele-

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FIG. 2.

FIG. 3.

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vation of the epidermis by the underlying fluid. Upon the affected area numerous vesicles are found having a very thin, translucent wall. The palms of the hands—the only part where discrete lesions are shown—are covered with bullæ. All of the finger nails are wanting. The bed of the nails is dry, quite soft and not sensitive to ordinary pressure, the merest trace of the matrix being left on the thumb. Over each knee is a large, irregular, infiltrated, elliptical patch, measuring six inches in diameter, the margin of which is composed of a number of elongated bullæ, while elsewhere the epidermis of the affected part is undergoing desquamation. The skin directly over the patellæ is practically normal; higher up the surface is irregular, so that the margins of the entire ellipsoid figure appear broken. On the right knee, below the patella and extending well towards the side, is a large irregular patch about six inches long and three wide, the border of which, covered with recently formed lesions, is well defined, though with uneven edges. Upon the extensor surface of the ankle joint, over the annular ligament, is a desquamating patch about three inches square, affecting the locality where pressure is caused by the shoe, especially noticeable after considerable walking. The entire plantar surface, with the exception of the arch, bears evidence of the disease; the regions between the toes are likewise involved. The vesicles scattered over the affected area are few; the changes of the feet are the same as those characterizing the hands, except that the heels are more thickly covered with scales and the epidermis shows a more decided structure. The non-development of the nails is like that upon the fingers. The toenails are absent except one on the right foot, which consists of a small, crumpled, horny mass.

The patient has been under my observation on three occasions only, and no essential difference has thus far been discovered in his condition. The eruptions always present the same unique features, with the exception of a diminution in the scaliness and an increase in the inflammatory symptoms. In one instance the patient was the subject of an outbreak, which his parents assigned to the death of a neighbor of whom he was especially fond. However, they did not claim that all outbreaks were due to similar influences, but were satisfied that many of them were. Indeed, they attribute the condition demonstrated by the accompanying photographs to unusual excitement. Numerous mechanical means, as rubbing, tapping, and application of heat and chemical irritants were tried without a reproduction of the blebs, although

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the subcutaneous injection of a fluid produced the condition on the following morning.

THE URINALYSIS: Amber color; specific gravity 1026; marked acid reaction; indican, slight indication; urea, 2.5%; total solid 60 grammes per 1000 c.c.; uric acid, normal. The sediment presents some epithelial cells, and many crystals of calcium oxalate.

The examination of blood made on two different occasions showed a slight increase in the number of eosinophile cells. Cultures from unbroken vesicles were always negative. Cover-glass preparations revealed the presence of leucocytes of the polymorpho-nuclear variety, occasionally an eosinophile cell, red corpuscles and epithelial cells, but never micro-organisms.

Thyroid extract and arsenic in increasing doses have been administered internally for more than a year. Local remedies and topical applications of every description have been faithfully employed, but without favorable results. The simplest and blandest powder as a local dressing proved as efficacious as any of the various remedies used.

An examination of sections made from a very early lesion, which was clinically a minute vesicle, corresponded histologically to the findings of Elliot, with whose paper upon this subject the profession is familiar, and also to those of Blumer, Colombini and others. As the investigation was restricted to the material supplied, it emphasized the fact that the vesicles were more deeply seated in the skin than usual. They were found to be formed between the rete malpighii and the papillary layers of the corium, their roof consisting of the normal layer of the stratum corneum and granulosum, together with the stratum mucosum which was more or less degenerated. The floor of these vesicles was composed of the papillary layers of the corium, the papillæ being bare and, in some places, elongated and distorted. There was evidence of œdema and infiltration, the fluid undoubtedly having passed from the blood vessels, as they were swollen and greatly dilated. The contents of the bullæ were evidently a network from the remains of the rete cells and fibrin. There were present also a few eosinophilic and polymorphonuclear cells. The contents of other older blebs consisted of corpuscles, degenerated epithelial cells and leucocytes, with a small percentage of eosinophiles. Bacteria were practically absent. The blood vessels of the papillary layer of the corium were enlarged; many of them engorged with red corpuscles, producing an œdema. In the reticulated structure, the leucocytes showed a tendency to group. These cells were apparently lymphocytes and the infiltration was more

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FIG. 4.

FIG. 5.

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marked in the regions of the vesicles. No mast or plasma cells were discernible. The appendages were apparently normal, the elastic tissue was well developed, and no micro-organisms were found.

It was noticed that thin-walled bullæ, either small or large, filled with serum, rarely with blood, existed on various parts of the body, mostly at the extremities. On the whole they were arranged symmetrically; their formation seemed to have been influenced by traumatism. They were subject to slow involution, which left an obstinate infiltration of the skin, causing a marked scaly condition, with an additional development of the blebs at the periphery. The circle thus formed was often broken, leaving a crescent outline, or a gyrate patch, the result of two or more crescents coalescing. The inner side of the circle was usually infiltrated and scaly, while the outer border was always abrupt, and often defined by the formation of blebs, or there was merely an erythematous boundary about the mouth, as shown in the photograph. Another interesting fact is that the patient was born with a luxuriant growth of hair, which fell off upon the appearance of the affection. This falling off of the hair is a process which universally occurs at a fixed time, and should be strictly separated from the pathological process involved in so-called alopecia. The defect in the present case does not consist in the falling out of the hair, but in its deficient aftergrowth.

In considering the etiology of this particular case, the influence of heredity is a possible remote factor. Yet, strictly speaking, we have no right to assume a hereditary predisposition, although the blood relationship of the parents favors the inheritance of the pathological sequences. The falling out of the hair, in addition to the characteristic lesions of the epidermolysis, as described in other recorded cases, renders this case unusual. If the other skin lesions are left out of consideration, the case, etiologically, may be similar, so far as the hair and nail lesions are concerned, to dystrophia unguium et pilorium hereditaria, described by Dr. Chas. J. White, and to other cases included in his article. It would seem that the nail lesions are to be traced to the same causes which produce those of the hair, and are not due, as generally explained, to the pressure of a bleb formation about the root. There are evidently several general etiological factors at work in these cases, viz:—

First: A possible hereditary or congenital lack of resistance in the skin in connection with a poor trophic innervation.

Second: An increased irritability of afferent nerve-endings in the

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skin, by means of which irritation, which ordinarily would have no effect, causes a local vaso-dilatation through the vaso-motor system.

Third: In connection with the previous factor, there may be a congenital lack of tone in the arterioles of the skin and mucous membranes, readily responding to vaso-dilator influences, or local irritation by a dilatation of the vessels near the point of irritation and a leakage of fluid into the surrounding tissue.

Any of these etiological factors alone might be insufficient to cause the lesion, while a combination of all would be likely to produce it. In case of the hair and nail lesions, the trophic factor alone would seem to be present.

While the findings in this case do not conform in every particular to those previously reported, they most strikingly resemble those of the so-called dystrophic variety, which is distinguished from the typical epidermolysis bullosa hereditaria by a predilection for symmetry, more pronounced skin alterations, cicatrization, pigmentation, atrophy, the formation of milia within the diseased parts or in close proximity to them, degenerative changes in the nails and the frequent involvement of the mucous membranes—all of these manifestations, so characteristic of the variety involving secondary changes, were observed in the case under consideration, but with these marked points of difference: a continuation of the lesion by the development of new blebs or vesicles at the periphery, following the advent of each attack—a fact not before recorded; an association of lesions around the natural orifices of the body, especially the mouth, anus and meatus; a complete alteration in the structure of the entire hairy growth.

The only case of epidermolysis bullosa hereditaria which approximates this in uniqueness is that recorded by Hoffmann—the sole case on record where any hair changes are noticed, and this was but a general thinning. There was also a distinctive localization of the lesions upon the extremities and occasionally within the buccal cavity, never upon the trunk, together with degeneration of the nails and slight atrophy of the skin. The affection, it is stated, manifested itself in the second year.

The more common type of the disease occurs in individuals with recognized hereditary tendencies, the bullae always appearing wherever the skin is injured or irritated. The mucous membranes are seldom involved, and only through special influences. The bullæ heal without cicatrization, leaving a quickly vanishing pigmentation. No permanent changes of the skin take place.

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Luitholen states, in a recent article, that the typical disease has appeared only in Germany or in persons of German extraction. This is not in accord with the observations of physicians in this country.

I have at present in my care three cases in one family, all of which conform to the more common type. The mother of the patients is of Irish parentage but American born, and the father is all American.

Some authorities, in cases where secondary changes exist, materially complicate matters by placing those involving dystrophy of the nails in one class, and those of atrophy and cicatrization of the skin in another.

The conclusions of Elliot, Fox and Augagneur with reference to classification seem more acceptable. Secondary alterations occur in other skin affections which are not recognized as forming a specific class requiring a special term for their designation or diagnosis.

Attention is here called to the fact that Bowen, whose opinion is always entitled to careful consideration, in an article with which you are all familiar, takes the ground that to the class of cases in which the one now discussed belongs, "congenital bullous dermatitis seems preferable to the term epidermolysis bullosa, as being less prejudicial to any further knowledge of the etiology."

For a correct understanding of this group of maladies we should not be overburdened with terms that create confusion, but should recognize the chief symptom involved—that of bullæ formation, the result of irritation, either by injury or pressure; not forgetting the fact that epidermolysis bullæ, regardless of any subsequent alterations which may appear in any particular case, should always be so classified.

The only argument which could by any possibility militate against this conclusion is the fact that the two types have never yet appeared in the same family.

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DISCUSSION

DR. DUHRING.—I quite agree with the position taken by the author in his paper. It seems from the photographs presented that there was a certain amount of distinct inflammatory action in the skin, which bears some resemblance to eczema. He has not alluded to that, but certain lesions as seen in the photographs, about the hands and forearms, would rather indicate an eczematous inflammation. The position that the writer of the paper has taken to classify the case as one of hereditary bullous inflammation of the skin, I think is a proper one. There is no doubt that there are different types of similar disease affecting the skin, some of which would hardly come under the classification in which he has placed this case.

DR. JAMES C. WHITE.—These cases are very much like a series of cases which I reported some years ago, and during the session on Saturday morning I expect to be able to show two of them. I mention this now so that the members may recall the writer's paper in connection with what they will then see.

DR. WENDE (Closing the discussion).—In answer to Dr. Duhring's question: I am sure it could not be eczema, although the condition of the hand, as shown in the photograph, bears some resemblance to the disease, nevertheless, the entire course is foreign to eczema, the inceptive lesion being a bleb, after the subsidence of which there is a continuation of their development at the border, rendering the affection unique.

DR. JOHN TEMPLETON BOWEN, of Boston, read a paper on

FOUR FORMS OF GENERALIZED EXFOLIATIVE DERMATITIS

(Erythrodermies, exfoliantes, généralisées, Besnier.)

As it has been my lot during the last few years to meet with an unusual number of instances of generalized exfoliative dermatitis, I have thought it worth while to describe four cases, illustrating different types of this obscure condition. It seems to me in fault of all etiological aid, that there are sufficient points of dissimilarity to keep these forms clearly separated for the present. It certainly will not aid us in our endeavor to increase our knowledge, to consider them all as Pityriasis rubra, without right of subdivision, as do the English; for there can be little or no doubt that different etiological agents are at work in these various forms.

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CASE I.—In December, 1900, I was consulted by a woman of twenty-seven, a resident and native of New Brunswick, who was then suffering from a third attack of general exfoliative dermatitis. I had considerable correspondence with her family physician, and from him learned that her first attack had come on five years previously, in November, after a period of anaemia and neurasthenia that had lasted about a year. It had a sudden onset, beginning with distinct chills, nausea and vomiting, with a temperature for nearly three weeks of 101°-104°. It began upon the face as an intense erythema accompanied by much œdema, extending rapidly over the entire body, and on the fifth day exfoliation in large masses began, and continued at its maximum for three weeks, all the nails and hair being lost. The process then began to diminish slowly, and at the end of five months, the skin had become nearly normal. It had not, however, regained its former texture, as there was a persistent roughness and dryness left. After this first attack there were several very slight and localized attacks of erythema, but nothing especially pronounced until the summer of 1900, five months before I saw her, when without warning or known cause there had been an almost exact repetition of the symptoms of five years previously, beginning as before with chills, nausea, and vomiting, elevated temperature and an intense erythema of the face, rapidly spreading to the rest of the body and exfoliating in large masses, the whole surface of the palm and sole being thrown off at a time. This attack was much shorter than the first one, and she had been well for three months until six weeks before she came to Boston for advice, when her third, and present, severe attack had manifested itself in the same way that the other two did, with initial chill and gastric disturbance and rise of temperature.

In this attack the nails have not been shed, but the hair has become very thin. When I first saw the patient, she was covered with an absolutely universal scaling eruption, the scales at this stage being fine and branny, whereas at the beginning of the severe attacks they are always very large. The patient was small, but well nourished and of fair complexion. The hair of the scalp and eyebrows is very thin and sparse. There is no glandular swelling and no abnormality of the mucous membranes.

At a second visit some days later there was considerable improvement. On close inspection there is seen to be a distinct dark pigmentation most marked upon the neck both in front and at the back, and extending down upon the back and abdomen. It is quite marked around

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the waist. Scattered over this pigmented area, are small round apparently leucodermic spots, which are slightly scaling, less so than the surrounding pigmented portion, and which have in some instances an atrophic appearance. Further observation of the case showed that these white areas gradually increased in size and number as the scaling diminished, while the pigmentation also became less marked.

A year and a half after she was seen it was ascertained by letter that she had had three mild attacks, each lasting about three days and characterized by chills, œdema beginning on the face and extending over the whole body, followed by desquamation. The last attack was more severe, though of shorter duration than the two previous ones. During this attack the tongue was swollen so that it protruded from the mouth, but this symptom subsided after twenty-four hours. Almost all of her attacks had occurred during the summer or autumn. At this time there was still some mottled pigmentation of the trunk.

This patient declared that of late she had not been accustomed to perspire anywhere on the body except on her face. This dryness of the skin has been noted also by Brocq and Crocker, the latter considering this feature as a sequel rather than a cause, as does Brocq.

This case is an example of the recurrent desquamative scarlatiniform erythema, or dermatitis, which has been abundantly described, especially by Féréol, Besnier and Brocq. In this case there could be no question of a confusion with scarlatina except perhaps at the onset of an attack, when I did not see her, but all dermatologists will remember instances where they were much puzzled at first to distinguish this form of dermatitis from scarlet fever. The proof is positive that this form of exfoliative dermatitis may occur from the ingestion of drugs, such as mercury, quinine, etc., and as is well known, Brocq and others have queried whether all cases may not be due to some such agent. It seems, however, pretty clearly demonstrated that no such association exists in a number of the cases. In the case reported the patient had at the time of the first outbreak been taking pills, the nature of which could not be determined. In succeeding outbreaks, all possibility of medication as an etiological factor could be excluded. Besnier's position seems the most reasonable, viz.: that in certain predisposed persons, many different causes as medicaments, toxines, local irritants, etc., may determine this manifestation, and that the cause in the various attacks may not always be the same. This position finds its analogy in the well-known susceptibility of the skin produced by poisoning

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with rhus or other cutaneous irritants, so that we may have from other slight causes recurrences of the exact type of the first attack.

We not infrequently see cases of a scarlatiniform erythema, sometimes more or less universal, often circumscribed, following surgical operations, sepsis, drugs or other causes. These are the scarlatinoides of Besnier. In view of their frequency and that the form under discussion has many features quite distinct from them, it seems to me that this recurrent scarlatiniform eruption is better named generalized recurrent scarlatiniform *dermatitis* following Vidal and Leloir, Mario, and Graham, rather than to place it amongst the erythemata. It should, however, be provisionally grouped, with the universal desquamative affections, as it may be best studied from that standpoint.

CASE II.—The patient was a clergyman, seventy-two years of age, who had always enjoyed good health and who had had no previous skin affection. There was a history of an attack of rheumatism and iritis some years previously. The attack had begun two weeks before I saw him, in December, 1900, on the face and head, as a violent erythema with considerable œdema, spreading rapidly to the rest of the body, so that at the time of my visit the eruption was absolutely universal, of a very intense red hue and profusely scaling. The patient was a large, well nourished, vigorous man. He had taken no medicine of any kind. The temperature was normal, the tongue clear, the urine normal. There was no itching and only moderate discomfort. At the apex there was a slight systolic murmur. On the scalp there was a tumor, somewhat obscured by the scaling, which had been called a wen, and had existed for fifteen years. This tumor was excised later and found to be an epidermoid cancer. The scales were very large in size, separating from the legs in the form of sheets.

Two months later, February, 1901, the report was that the patient was slowly improving. The scales had now become very small and fine, the skin felt softer, and the erythema was not nearly so pronounced. There had lately appeared upon the chest and back, and to a less extent upon the limbs, quite a number of small white spots from the size of a pea to nearly that of a quarter of a dollar. They were not atrophic, but stood out very sharply from the surrounding erythema, and were moderately scaling.

The patient's general health continued excellent, and he was soon able to go about and pursue his ordinary mode of life. The scaling and redness diminished very slowly. I saw him just a year after the beginning of the affection. It was found that the "white spots" that

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have been described had increased very much in size, so that the intervening hyperæmic areas now appeared as the prominent spots, and not the white areas. The white areas were not scaling, but were slightly rough, while there was still a slight desquamation on the red spots. There was a slight general thickening of the skin of the face. It seemed evident that the white spots were produced by a disappearance of the hyperæmia in those areas, with perhaps also a disappearance of pigment, a leucoderma, and that as the affection progressed toward recovery these areas increased peripherally. These "white spots" always had a convex margin, similar to that of vitiligo.

At the acme of the attack the hair was very much thinned, but was never wholly lost. The nails were lifted from their bed by the accumulation of horny material, but were never wholly lost.

This case belongs in the type of Dermatitis exfoliativa Wilson, described by Brocq as "dermatite exfoliative generalisée," or "maladie d'Erasmus Wilson," although Wilson was not the first to observe the type, but only created the name dermatitis exfoliativa. It is not my purpose to discuss here the different symptoms of this form. In most instances, as is true of all forms of generalized desquamative dermatitis, the diagnosis is only rendered clear by the course and evolution of the cutaneous disturbance. Its claims to be separated from desquamative scarlatiniform erythema are not very imposing, nor can it often be distinguished clinically from the secondary desquamative dermatitis that is illustrated by the next case.

CASE III—The third case is that of a single woman of forty, who had had two previous attacks of intense dermatitis of the face and hands which were considered to be due to poisoning by ivy, and were of that type. I saw her in September, 1899, when her head, arms, legs and to some extent the trunk, were the seat of an intense dermatitis with much œdema and very great erythema, but with scarcely any exudation. It was thought possible that ivy poisoning may have been responsible for this attack also, as the patient lived in the country and was in the habit of walking in the woods. After a few weeks, this case, which began with the appearances of an artificial dermatitis, developed into a generalized exfoliative dermatitis. The patient continued in this state for over a year, before there was any sign of improvement. After that there was a very gradual bettering with frequent relapses. When seen two and a half years from the beginning of the attack there was still some slight scaling and infiltration in places. The general health during the attack was never markedly affected, except what

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resulted from the affection of so large an area of skin. The nails were never lost, but were unevenly formed, opaque and covered with ridges. There were no other symptoms of importance, and never any elevation of temperature.

This case is thus briefly reported, as its type is familiar to all, and as it is of pretty common occurrence. It belongs to the form called by Besnier "Erythrodermie exfoliante secondaire, accidentelle," which embraces the cases of generalized exfoliative dermatitis, following or developing from psoriasis, eczema, lichen planus, etc., or caused by the administration of a drug internally, as quinine, belladonna, etc., or by the action of an external agent, such as mercury. Should these so-called secondary exfoliating erythrodermata be accorded a separate place? Crocker declares that he has seen as fatal results from these secondary cases as from the others, and that a milder and shorter course is not a characteristic of them, as Brocq believes. It cannot be doubted that certain cases, as the one just reported, may be prolonged over years. Although I have seen a good many of these cases, I have never known one to have a fatal termination.

CASE IV.—The last case is one of pure Pityriasis Rubra, of the Hebra type. It was described by me in the St. Paul Medical Journal in February, 1900.

The patient was an unmarried woman born in America of Irish parents, and twenty-five years old when the affection began. She had had no previous illness of importance, and the family history was negative. She was a strong looking and intelligent woman. When first seen the affection had just made its appearance and was confined to the face, and could not then be differentiated from an erythematous and scaling eczema. The skin was bright red, not infiltrated, and covered with fine scales. There was no exudation. There was moderate pruritus. Otherwise the patient was perfectly healthy as far as could be determined.

I saw this patient at intervals of one or two weeks during the next few years. Treatment of various kinds seemed to have absolutely no effect on the process, which steadily progressed. Before long the scalp was entirely involved. Patches gradually appeared in the axillae and on the chest, which increased or coalesced until at the end of a year from the time when she was first attacked, the entire skin was affected. No part ever became normal after it was once involved. There were no symptoms referable to the internals organs, nor any signs upon physical examination.

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During the next four years, when I saw her at intervals, there was a slow progression of the disease. After the first year she was confined to the house on account of difficulty in locomotion. The erythema became more pronounced and there was a very active and constant desquamation, mostly in the form of fine, branny scales. There was never, from start to finish, the slightest sign of exudation. The palms and soles were covered with thick keratoses.

Treatment had practically no result. Thyroid extract was given for some time, and finally omitted on account of its depressing effect upon the heart. Arsenic was equally inefficient. Stimulating applications were not well borne, the greatest relief being afforded by those of a soothing nature. Various medicated baths were tried, but did not give especial relief.

Three years after the beginning of the affection and two years before the patient's death, the hair began to fall from all parts of the body until during the last months of life there was total alopecia. The nails became thickened and discolored and were finally reduced to brittle, formless stumps, loosely adherent to the nail bed.

During the last year of the patient's life, there began to be a marked atrophy of the entire integument, with loss of almost all the subcutaneous fat. Three months before her death this atrophy had reached an advanced stage. Hitherto the suffering had not been great, as the internal organs performed their normal functions, and discomfort from the continual scaling and from the atrophy of the skin about the joints was the only thing complained of. Now there occurred occasional attacks of faintness, especially after eating, with flatulency and pain. There was also much restlessness and insomnia. At this time physical examination failed to detect any organic disturbance. The urine was normal. The heart's action was weak, but there was no sign of disease. A month before she died there was a fainting attack lasting several hours, and after that the scaling, which had been continuous and excessive, suddenly ceased.

During the last month of her life the skin had shrunken so that the body looked about one-half its normal size. There was great ectropion and the lips were shrunken so that the teeth in front were fully exposed. The limbs could not be flexed. There were large bed sores on the back and over the trochanters. There was little or no scaling. The fainting attacks continued and there was much distress after taking simple nourishment. There was no glandular enlargement. Repeated examination failed to detect any internal complication, with the excep-

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tion of weakness of the heart. She grew weaker rapidly and died of exhaustion, five years after the first appearance of the disease.

With regard to the question of tuberculosis, which has been found to accompany this affection so frequently, there were no signs of it at any time, in the case I am dealing with. It will be remembered that Jadassohn found tubercle bacilli in the glands in two of his cases, in one of which there were no other signs of tuberculosis. Sellei, in a late communication, reports a case where no symptoms of tuberculosis were observed unless possibly a terminal diarrhœa could be so regarded. It seems to me that the theory that we have in Pityriasis rubra a condition which readily lends itself to inoculation with tuberculosis, is far more probable than the assumption that the cutaneous changes are caused by the action of the bacillus, whether directly or indirectly. The rareness of this form may be seen from the fact that Jadassohn was able to collect only sixteen cases, to which he added two from his own observation and one doubtful one. Certainly the typical cases of this variety present sufficient characteristics to warrant their separation from the other types of recurrent scarlatiniform dermatitis or from those exfoliative processes secondary to drugs, or certain other cutaneous affections. The form of dermatitis exfoliativa Wilson would appear to me to have more points of similarity with Hebra's type, although I would by no means group them together. It is difficult to confute those who believe in a benign form of Pityriasis rubra Hebra, and granting that this may exist, it is hard to determine oftentimes where forms of the generalized exfoliative dermatitis of Wilson, with its rapid, acute onset, and favorable termination, end, and where Pityriasis rubra Hebra begins.

DISCUSSION

Dr. Ravogli.—I was very much interested in listening to Dr. Bowen's paper. I find that the question of exfoliative dermatitis is extremely difficult and complicated. I have had occasion to see some cases of dermatitis exfoliativa which I have referred to the semi-category of the erythrodermies, and in so doing I followed the opinion of Dr. White. I had a case in the hospital, that of a boy four years old, who, when he was admitted, was covered with an eruption of red patches with thin scales which had nothing to do with psoriasis, nothing with eczema, and I found that the name erythrodermies covered the case perfectly. If we use the term dermatitis we immediately get the idea of an inflammatory process, while in this case there was no fever, no reaction whatever, and very little itching. The microscopic examination showed very slight infiltration and small leucocytes in the derma, but scarcely

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enough to call it an inflammatory process. By the term erythroderma we understand a red derma, and I described my case as one of erythroderma squamosum, following the opinion of Dr. White.

These affections should not be mixed up with erythema scarlatiniforme and other desquamative conditions which are truly of an inflammatory character. I have had in my practice a case which showed all the symptoms described by Besnier as erythema scarlatiniforme. It had nothing to do with scarlatina, however; there was nothing but an erythematous eruption covering the upper and lower extremities and followed by a thick desquamation. It was associated with some fever and redness of the throat, but nothing like true scarlatina. The patient was living in the country and there were no cases of scarlet fever in the neighborhood. The diseases lasted not more than three weeks and then entirely disappeared.

Dr. James C. White.—I have been in the habit of recognizing three types of exfoliative dermatitis. First, the generalized well-marked recurrent form, a fugitive process which sometimes recurs within a fortnight, and which is very difficult to distinguish at first from scarlet fever. Second, a deeper seated process of indefinite duration, which is represented by the type not infrequently set up in psoriasis under the influence of chrysarobin. The exciting cause, however, is not always apparent. Third, a much more serious process in which the skin is very deeply affected, in which there is uniform redness at times, great desquamation, and which often terminates in pemphigoid lesions and deep excoriations, and the cases I have seen of that type have uniformly proven fatal.

The above are the three most distinct divisions of this affection, according to my experience. That they are related to each other I do not think follows.

Dr. Sherwell, of Brooklyn.—I regret that I did not have the opportunity of hearing the whole of Dr. Bowen's paper, and am therefore scarcely in a position to discuss it. I have seen a number of cases of pityriasis rubra in an aggravated form, a number of which have ended fatally. I believe Hebra makes the assertion that this is the only disease which invades the whole of the external cutaneous envelope, including the prolongations, such as the nails, etc. I have reported cases where the use of linseed oil baths, and linseed as a part of the diet, accomplished good results.

I have seen, of course, the milder, fugitive cases. Not long ago my little grandchild developed one of these scarlatinoid eruptions which looked absolutely like scarlet fever, but which was distinctly due to a ptomaine and was the result of eating some infected meat. The eruption disappeared without any marked symptoms. I think Besnier's term is a good one, but I do not consider it a better than a variety of other terms that are used for the same affection, but as it is in such general use, think it well to be continued.

Dr. Pollitzer, of New York.—We welcome every contribution to our knowledge of this subject, which is at present still in a very badly mixed state. I believe we are justified in dividing this condition of red, scaly skin into more than the three groups which Dr. White mentioned. We have, in

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the first place, the well marked recurrent scarlatiniforme erythema; second, the desquamative erythema following in the course of a severe eczema, psoriasis or lichen ruber; third, that following the ingestion or application of certain drugs, such as mercury. The latter two groups constitute the class which Bazin described under the name of herpétides exfoliatrices malignes. Then we have the dermatite exfoliative généralisée subaigu of Besnier-Brocq; and, finally, the pityriasis rubra of Hebra.

I think it is a little premature to put all these types of disease under a single head simply because they have the symptoms of redness and scaling in common. The Hebra form especially presents a well marked type of disease which deserves a position by itself. The scaling and redness followed after a period of greater or shorter duration, by atrophy of the skin and death of the patient, constitute a distinct type of disease which has but little in common with the other forms of exfoliative dermatitis. The cases reported by Kaposi and others, in which recovery took place, are with questionable propriety grouped with the pityriasis rubra of Hebra since the diagnosis of the latter disease is not beyond a question until atrophy of the skin has set in. The cases of Kaposi have been regarded as forming a connecting link between the Hebra type and the Besnier-Brocq form, and if their relation to the Hebra type is not admitted then certainly the connection between the other forms of exfoliative dermatitis and pityriasis rubra Hebra becomes more than doubtful.

DR. BOWEN.—I should like to ask Dr. White if he includes the pityriasis ruba of Hebra in his third class, together with other less typical forms?

DR. J. C. WHITE.—I should include that as the one form in my third class.

DR. HERMANN G. KLOTZ, of New York, read a paper entitled

A CRITICAL REVIEW OF L. PHILIPPSON'S PROPOSED REFORM OF DERMATOLOGY

Ever since the diseases of the skin began to be considered and studied in a scientific manner, a large amount of conscientious and creditable work has been produced and is still being brought forth by earnest students among the medical profession in all civilized countries, and an immense material has been accumulated and placed at our service. Everywhere dermatology has assumed a commanding position among the special branches of medicine. Nevertheless if the question is put to you, whether the study and the teaching of this, our special field, are founded on a thoroughly satisfactory, truly scientific basis, I doubt whether many amongst you would be ready to answer absolutely in the affirmative. Two well known and undisputed facts alone demonstrate how far away we are from an ideal position: on the one

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hand the experience that the diseases of the cutaneous integument, which is immediately exposed to the scrutiny of our senses, and therefore ought to be the best known portion of the human body, to a large number, probably to a majority of the members of the medical profession are the most obscure and often bewildering phenomena. On the other side we see the incessant but so far unsuccessful efforts, continued through more than a century, of those interested in and occupied with the study of dermatology, to formulate a system under which all the pathological changes of the skin would be satisfactorily distributed and classified. By having given up, for the time being at least, all classification and having accepted simply the alphabetical order for the diseases of the skin, we have ourselves acknowledged the existence of such a condition. If, then, there is something rotten in the state of dermatology, it is but natural that from time to time voices should be heard pointing to its wants, trying to find out the underlying causes and indicating means to bring us nearer to a perfect understanding of our discipline. Whenever such efforts are made in a truly scientific spirit, they certainly deserve to be carefully considered and judged on their merits. While a single man's work may not be perfect or complete, it may contain some points of importance and of merit, and may help in some way to smooth the always rough and difficult path of reform. This seems particularly the duty of our Association, the avowed aim of which is to promote the study of dermatology in all its relations.

Within the last year my attention, and probably that of not a few among you, has been attracted to several publications of *L. Philippson*, assistant to Prof. *Tommasoli* at the dermatological clinic of the University of Palermo, Sicily. In 1895 he published conjointly with L. Török, of Budapest, like himself a pupil of Unna: General Diagnostics of the Diseases of the Skin, founded on Pathological Anatomy, and during last winter in the Archiv für Dermatologie (Vol. LVIII) an article: The Morphologic Tendency and the Anatomical-Genetic Tendency in the Dermatology of the Present Day. It occupies 56 pages of small print, which are not exactly easy reading even for a German, particularly as it is almost impossible to follow the author without a certain knowledge and understanding of his book. Under these circumstances, although I know that you are all more or less acquainted with the German language, and are interestedly following the progress of dermatology in European countries as well as in our own, I may be pardoned for assuming that not many among you have found the time and the patience to give as much attention to such an article as it

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seems to deserve and as you should have liked yourselves to bestow upon it. Therefore I have felt justified in trying to give you a review of *Philippson's* ideas and furnish an opportunity for discussing the same here.

Philippson's essay on the morphologic tendency and the anatomical-genetic tendency in modern dermatology is divided in two parts and contains a critique of dermatology as usually studied and taught to-day, and the principal outlines of a reformed or rather remodeled and revised dermatology. The title was chosen by the author to indicate that there exists already a current in dermatology which endeavors to replace the dominant influence of the doctrine of the efflorescences or elementary lesions by exclusive attention to the anatomical and genetic features of the cutaneous diseases.

The first part arraigns the dermatology of the present day for remaining under the influence of the theory of the elementary lesions and allowing it to be paramount in teaching and studying. These elementary lesions, which are claimed to represent the fundamental phenomena, of which all the pathological conditions of the skin are composed, are in reality nothing but small circumscribed foci of diseased skin. Adopted in the early times of dermatological observation, when the morphologic features alone offered themselves for the differentiation of the various pictures of the diseased skin, partly taken from the ordinary language of daily life, the names of these elementary lesions do not describe, signify or even suggest any definite anatomical or histological change of the tissues, but only the physical features and the limits within which they present themselves to the eye. If *Kaposi* has defined the efflorescences as morbid changes, generally restricted to a small circumscribed area; which in form, development, progress and anatomical character present a definite type, he has given them a much wider scope than they are entitled to, and has rather indicated what we ought to be able to learn from such important features. An elementary lesion, for instance a papule, may be produced by entirely different anatomical processes, may be of varying structure and may follow an entirely different course under different circumstances. But the worst is, that the terms used for the elementary lesions are by no means definite or exact even in regard to their morphologic significance: various authors greatly differ in their description, and one calls a papule what the other calls a nodule, etc. Under these circumstances it seems strange that dermatology, after entering upon new and modern paths of investigation, has not discarded this obsolete doctrine and

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adopted a different, an anatomical foundation. The reason for this continued prevalence of the old standpoint probably has been that indeed some pathological processes in the skin not only frequently appear in such circumscribed form, but that a number of them always appear and remain so during their entire course. But this very tendency of certain processes, to be restricted to small areas, rather than the areas themselves, is a peculiar feature, and deserves the most careful investigation in regard to its anatomical causes. Whether the elementary lesions themselves are essential for a pathological process, will have to be determined in every single case. Having demonstrated what the doctrine of the elementary lesion really amounts to, and that it is not fit for a foundation of dermatological studies and instruction, *Philippson* traces its mischievous influence through the different stages of dermatological work, beginning with the description of the diseased conditions of the skin. He then explains how it directs the diagnosis into its channels, how it guides pathological investigations, how it is responsible for the peculiar conception of what constitutes a disease and for the strange character of much clinical work, how it controls now just as much as ever the formation of new diseases, and how now and then it is revealed as the real motive for so-called difficult problems. It would be interesting enough to follow *Philippson* more closely on his critical raid through the dermatology of the present day, but it would be almost impossible to do justice in a review to the large amount of detail and the numerous citations from the books of various authors, particularly of *Kaposi, Besnier, Brocq* and others. The habit of temporarily dropping a subject for another to return to it later, and frequent repetitions, do not contribute to render the paper easy reading and to readily understand the author's purpose. Here and there a certain animosity and the influence of some prejudice become apparent, but in general *Philippson* makes out a good and strong case and opens the eyes of the reader to many shortcomings and open faults and errors of our conventional way of doing things in dermatology. After all, it must not be understood that *Philippson* denies the existence of the elementary lesions or even their right to be recognized, but he wants them to be considered only in connection with the anatomical process of which they indeed form only a part. In fact, his real objection is more to the habit of making a diagnosis, not only of the conditions of the skin, but of a real disease from the physical and morphologic appearance of the diseased skin, may they be circumscribed or diffuse, although the latter usually are hardly considered because they are not typical.

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In the second part *Philippson* calls attention to the exceptionally favorable position which dermatology occupies in comparison with medicine in general and with other specialties, because the organ with which it has to do is spread out for the immediate appliance of our senses of sight and of touch in its various branches. In examining the diseased skin, we necessarily perceive certain anatomical changes. The dermatological clinic therefore really is the study of pathological anatomy on the living organ, and the symptoms with which it has to do are the anatomical changes produced by some pathological process. Generally the pathologist's work is limited to the demonstration on the cadaver of certain deviations from the normal conditions just as they exist at a certain time. But on the skin we are in the position to follow the anatomical changes from the beginning to the end, we can attend step by step the several phases of development of the process and we can immediately trace the relations of the various changes to the various stages of the process itself. Therefore it becomes our duty always to investigate the diseased skin with the view of ascertaining the anatomical changes and the anatomical process which causes them, but not to be satisfied with taking notice of the physical and morphologic appearances of the changes only, to describe them in conventional terms and give them the name of a disease. In order to accomplish this in an intelligent manner, we must have a somewhat remodeled general pathology, to teach the nature of the anatomical processes, and general diagnostics, to teach the means for recognizing them on the living. The rules and teachings of the general pathology of the human body to a certain extent apply at once to the general pathology of the skin, but on account of the peculiar construction of this organ and of its exceptional localization, not all of them can be immediately made serviceable for this purpose. Such a general dermatological pathology will include general pathology and general etiology, but as a peculiar advantage also the genesis of the anatomical process. It can describe the development of many anatomical changes, which on other regions of the body become the object of examination only as finished products. Certain local disturbances of the blood circulation, the conditions of inflammation, the results of embolism and metastasis, for instance, cannot be observed as well on any other organ; many biological features of various progressive and retrogressive changes, particularly those of the granulomata and of tumors have been much better studied on the skin than on any other organ; certain features of the blood vessels, of the tissues themselves, and even

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of the entire organism become conspicuous on the skin, which are absolutely unknown or but very little understood on other organs. In particular we are enabled to gather exact knowledge of the relations between some cutaneous changes and their causes, principally the pathogenic micro-organisms.

The principal contents of such a general pathology have to be, and to a large extent have already been furnished by clinical observation, but a great deal has erroneously found its place in the present special pathology. For here we find under the guise of special diseases a number of morbid processes which may appear under the most different conditions, and therefore have to be considered as general forms of disease which of right belong to general pathology. What is now described as dry and moist eczema, as lichen simplex, as erythema, will figure as special forms of inflammation; from the development of erythema multiforme and nodosum, purpura, pemphigus, etc., we gather the material for the general description of embolism and metastasis. Still many blanks will remain to be filled by investigations to be made for this special purpose, but principally in the clinic. Such a general pathology will not be theoretical only, but being mostly clinical will include practical knowledge as the basis for the general diagnostics. General pathology and general diagnostics will complete the dermatological propaedeutics. The book on general diagnostics illustrates *Philippson's* ideas of these chapters, but I have to leave its consideration until later on.

The special pathology from which a large portion has been eliminated and placed into the general pathology, will be greatly reduced in volume, but it will contain only cutaneous diseases, the conditions of which are exactly known or sufficiently so at least for the demands of clinical purposes: diagnosis, prognosis and therapeutical indications. Mere combinations of symptoms ought to be relegated to the general pathology unless besides the changes in the skin other symptoms or other signs of disease can be found, which bear legitimate relations to each other. The reduction of the number of real diseases will deliver us of a large portion of our previous bewildering nomenclature, and will do away with some of the confusion which has been created by the promiscuous use of the favorite traditional terms. It will also facilitate the introduction of order into the contents of the special pathology and a satisfactory classification of the diseases.

In describing the morbid changes in the skin, we must follow some definite rules, so as to outline the complete history of the anatomical

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process. The description therefore must not be restricted to the consideration of the small circumscribed foci; they will be considered only in so far as they form a part of the anatomical process. We then shall not gather as heretofore a number of pictures without any organic relations. Many simple facts will appear as the natural consequences of the anatomical process and will need no further explanation, as we shall be acquainted with them from the general pathology, and we shall be able to dispense with much of the specialistic terminology, which can be understood only by the specialist, and contributes so much to making dermatology a sealed book to many physicians.

In order to give such a description, we must apply a careful examination and observation to the diseased portions of the skin at the hand of our general pathology and diagnostics. We must define the topographical seat of the anatomical disturbance, the general pathological character, the mode of their first appearance, the development of the primary and secondary foci of the disease. We must directly search qut the anatomical changes exactly as it is done on the cadaver, not only the macroscopical but also the microscopical ones. As the skin is spread out in a comparatively thin layer, we can recognize on the living organ a great deal more of finer detail than on the dead, particularly the local disturbances of blood circulation, either if independent or if accompanying other anomalies. If we cannot clearly define the seat or nature of the anatomical changes with the naked eye, a microscopical examination must necessarily be made, preferably by means of serial sections. Should the miscroscope fail to furnish a satisfactory explanation, we must for the time being be satisfied, and not insist on making the diagnosis of some disease or establish a new one on the strength of the morphologic features, as has been the habit, often enough with the result that cases of similar morphologic appearance but of totally different histological structure have been joined under the name of one disease.

In such an examination *all* morbid changes have to be equally considered, small and large, of regular shape or undefined, extensive or circumscribed. Where diffuse, irregular patches are found besides typical or circumscribed ones, they deserve not less recognition, or even more if they develop from the latter. Where *only* circumscribed lesions occur, special investigation will be required, whether they are a natural consequence of the process or of the structure of the skin. It will be of great importance to distinguish between primary and secondary foci of disease, partly because the early changes may differ

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from the later ones, partly because in the primary foci certain features may become manifest, which are intimately connected with their origin. From the mode of their first appearance we may be able to draw conclusions not only in regard to the direction from which the irritating cause has entered the skin, and in regard to the path by which it has entered, but also in regard to its general nature. The first manifestations may vary greatly as to their location, age, number, distribution and arrangement, and the rapidity of their appearance depending whether the causes affect the body from the outside or from the inside, be it by contiguity directly from underlying organs or by embolism or by way of the nerves. It will also be considered insufficient to state the condition of the skin as found at one certain stage. Quite different processes may exhibit at a given time similar or apparently identical features, the significance of which can only be recognized by giving close attention to their development. For the same reason the termination of the processes has to be studied, because some of them reveal their true nature only in their last phase. This is simple enough, if we can follow a case from the very beginning to the end, but if our observation commences only at a certain later period of the development, a methodical investigation will be required to assign all the different and various changes to their proper places. Here the discernment of the primary focus will be of material assistance.

Finally it must be remembered that many circumstances may influence the appearance of the morbid changes, which are entirely independent from the pathological process itself. Such circumstances may be located in the organism itself or may depend on external factors. The irritability of the blood vessels here plays an important part, varying within very wide limits. Among the external influences therapeutical measures, which have previously been employed, may greatly alter the appearance of the anatomical changes; by the infection with pyogenic microorganisms an independent pathological process, running its own course, may be implanted on the original conditions. In such cases it may become necessary to wait till the complication has run its course, before we can resume the consideration of the original process.

The part of the microscopical examination in the new order of things has been mentioned already: it will not be optional any longer, but forms an essential part of the clinical examination. It accompanies the clinical observation and steps in when the former cannot proceed any farther, and its results obtain their real value in so far as they become immediately connected with the clinical facts which depend on the

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anatomical process. The essential features of the changes, their seat and nature may occasionally be determined only by the microscope, and so the imperfect clinical examination may be rendered complete. There exists therefore the most intimate reciprocity between the histological examination and the clinical observation, none can stand without the other, and the former cannot be allowed to proceed independently.

The examination of the diseased skin and the definition of the evolution of the anatomical process form the first part of our clinical work, and lead for the time being only to an anatomical diagnosis, leaving the definition of the disease itself, the diagnosis proper, to the future. This may seem to be a mere formality, but in reality offers many advantages. Having reached a definite conclusion in regard to the anatomical process, a natural position for a temporary rest is afforded, which we do not find under the present method, when we are accustomed after the examination of the skin to immediately find the name of a disease which we can apply to the morphologic, perhaps also to the anatomical features which we have found. It is true such an immediate adoption of the name of a disease offers some advantages, in so far as it furnishes some indications as to the probable progress and the termination of the morbid changes, or perhaps also to the anatomical nature which we have not been able to define by immediate observation. But such a proceeding also invariably leads to a complicated differential diagnosis, to the comparison with a number of quite heterogeneous phenomena, which the anatomical diagnosis renders entirely unnecessary. Under the usual methods we are unable to consider independently the diseased conditions of the skin without the traditional name of some disease, and while we are not quite ready to adopt such a one for the final diagnosis, we speak of *an* eczema, *an* erythema, etc., committing ourselves to the name more deeply than we really intended. This is particularly likely to occur, if we are not able at once to make a decided diagnosis, either because we see only the early stage or an abortive or fragmentary condition of some anatomical process, or because the case presents entirely strange and unusual features. With an anatomical diagnosis we can be contented for the time being, and wait for further developments. The anatomical diagnosis also gives due weight to the results of the histological examination, while usually we find them in the textbooks added to the description of the disease as a separate and independent paragraph, often without any influence on the diagnosis.

Often we may be able to complete the genesis of the anatomical changes by directly fixing its cause; for instance, in cases of artificial

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dermatitis, of drug exanthemata, of many pus affections, of infections with fungi. Then the anatomical diagnosis completes our work, for it would be superfluous to attach any special name which would only obscure the understanding. Otherwise the establishment of the anatomical diagnosis leaves us entirely free to complete the examination of the patient according to the usual clinical methods. This is of particular importance if we have to do with diseases which depend on conditions located not within the skin but in some interior organ of the body. We are then not bound in advance to adopt the diagnosis of a certain classified disease because its skin changes are similar to those of the given case, but we shall identify it with that disease if it agrees in every way, in regard to the relations of the skin's changes as well as with the internal conditions. We thus are able to avoid the names of diseases which are often used for all cases exhibiting similar conditions of the skin, although they may be of entirely different pathological character.

If, then, we follow the course advised by *Philippson,* our experience will be the following: Either we are really able in a given case to recognize a classified disease, or we are not. This will happen if we have to do with one of the diseases which *Philippson* calls variable ones; that is, diseases which have been established only on the basis of identical skin changes and include radically different processes. We then must try to complete the anatomical diagnosis by all possible clinical facts, and in accordance with these to form our judgment. This would end the diagnosis, but would put us under the obligation to look around in literature for similar cases which in one way or other may complete our own observation; however, we must not depend in these cases on the names, but on the facts.

At present the student who begins instruction in dermatology is introduced in an entirely new doctrine, which usually impresses him as strange, as he finds great importance assigned to certain features. the elementary lesions, of which he had no previous understanding. Under *Philippson's* plan instruction will begin with the general pathology, which in its principal features will not differ much from the general pathology of the human body, only it will consider more exactly the evolution of the anatomical process which it watches on the living organ. On the anatomical conditions as observed on the living patient, general diagnostics will be founded. If the morbid conditions of the skin are presented to the student simply as anatomical changes, they may at first seem to be of but slight importance, because

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he is used to much more conspicuous changes from the other clinics, particularly from the surgical one; at the same time he may be somewhat bewildered by the large number of observations, but gradually he will become interested in the biological features of the pathological processes. He will probably feel somewhat embarrassed at first, when he is called upon to make an anatomical diagnosis only, because he is accustomed to look on every patient as an example of some disease and to regularly end the examination by making the diagnosis of a disease. As the number of acknowledged diseases will be much smaller than it is now, and as the description of the disease in a given case will contain the complete evolution of the anatomical process, which itself furnishes the important points for their distinction, the diagnosis of the disease itself will be much easier. It will only require the consideration of the other symptoms and features of the disease. The traditional differential diagnosis with its complicated tables will be unnecessary, because it is founded only on the similarity of the morphologic appearances. Differentiation really has to take place during the examination of the anatomical changes, when we have to determine their seat, their size, their character, their development, etc. It may happen that we are not able to reach a final conclusion, but that it will be necessary to consider all the circumstances which form the obstacles to the recognition of the true facts, questions which belong into general diagnostics. In special pathology, only well-studied diseases will be considered. In describing new diseases we shall have to follow the same principles which are generally accepted in medicine, and if we are not able to find sufficient facts, we have for the time being to give a place to our observations in the general pathology. It will therefore not be absolutely necessary to close our clinical work with the definition of a classified disease, but if we cannot do so, we will accept as an equivalent the anatomical-genetic diagnosis under consideration of all the pathological phenomena and conditions, or we must be contented with such a diagnosis as the best we can accomplish.

So far Philippson's article. For a better understanding of his plans I have given a brief summary of the general diagnostics.

Philippson and *Török:* General Diagnostics are divided in the diagnosis of the pathological anatomical processes of the skin and in the diagnosis of the cutaneous diseases. The first part begins with the consideration of general pathological conceptions as applied to the skin. Inflammation, the most important process, is first taken up. In all inflammatory processes two different actions can be distin-

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guished: the one, the direct and characteristic effect of the pathological agent, occurs on the place where the influence is most strongly felt; the other, which is not characteristic for the pathogenic agent, takes place in the environs of the spot of entry and accompanies the most different pathological processes. It particularly presents features corresponding to what generally is called inflammation. These changes depend on a general biological quality of the organism, its irritability, and can be denominated as the phenomena of reaction to irritation (Reactive Reizerscheinungen). They may be subjective, becoming manifest as itching, burning pain, etc., or objective, clinically represented by congestive hyperemia with or without œdema, histologically also by cellular emigration from the blood vessels of the red and white corpuscles, and by proliferation of the fixed connective tissue cells; the most common form of pathological changes, inflammation, is therefore not used any longer in a pathological-anatomical but only in a clinical sense, and then only when the four cardinal symptoms are present.

For the diagnosis of the anatomical process the changes immediately due to the damaging agent have to be considered, not the reactive phenomena, which are identical under all circumstances, differing only in the degree of intensity. These ideas concerning inflammation predominate to a large extent throughout *Philippson's* argumentations. Besides other processes not so much peculiar to the skin, desquamation and the formation of vesicles and bullæ are given particular attention; the former in most instances is a secondary condition, the underlying cause has to be looked for in a disturbance of the mucous layer of the epidermis, which serves to define the anatomical process. Then follow remarks on the normal anatomy and physiology of the skin, the furrows and folds, the papillary layer, the epithelium, the transparency, and peculiar conditions of the skin due to age. Next are enumerated the clinical signs of the anatomical processes in general and as depending on the anatomical structure of the skin, how they manifest themselves if situated in the papillary layer or in the epidermis or in both these regions together, the characteristic signs of cutaneous and subcutaneous changes, the differences in color, consistency, and the influences of the location on certain regions of the body. The consideration of all these features leads to the anatomical diagnosis.

In the second part on the diagnosis of the disease itself the significance of the anatomical process in the skin for the disease itself is the first subject considered. In a number of cases we find not an active

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process any longer, but the finished results of a process which may have run its course during intrauterine life or later during childhood or adult life; such conditions are designated as deformities (Missbildung). Among the active processes, the clinic meets with the most various changes in the organism during their course. The most simple conditions prevail where we find evidence that some mechanical, chemical or thermic influence has affected the skin. In certain cases only the character of the tissue degeneration alone in connection with the reaction phenomena allows us to make a definite diagnosis; usually we find only the reaction phenomena without any characteristic features calling attention only to the fact that some irritation has taken place, the nature of which has to be determined by clinical, mostly anamnestic means. Similar conditions prevail where we find the reaction phenomena without any direct degeneration of the tissue in the shape of more or less transient and more or less extended erythema, œdema, formation of vesicles, etc. These functional disturbances of the circulatory apparatus only point to the fact that we have to look for the important etiological factors not in the skin but in the interior organs of the body, since the changes in the skin are not characteristic nor important enough to establish a disease, but form only one amongst other symptoms from which the diagnosis has to be made. The papules which accompany some of the pruritic diseases, the erythematous and urticaria conditions, hemorrhages, desquamation, ulcers, etc., do not show any histological differences, nor do the syndromes like lichenification, eczematization, the urticarial skin lesions and the results of functional disturbances of the blood vessels which are grouped together in erythema multiforme, dermatitis herpetiformis, pemphigus, and similar diseases. Besides these cases, where the conditions of the skin appear either as the consequences of some external injury or of some internal disturbance, there exists a large group in which the anatomical changes evidently depend on causes which are localized in the skin itself, and the pathological process, which under certain circumstances may be sufficient for the diagnosis, exhibits his characteristic features in that organ alone.

After a brief consideration of the course of the pathological process in the skin and of the course of the diseases in general, some remarks on the sensation of itching lead to the chapter on the definition of the limits of dermatology. A clinical specialty must include only diseases the most essential constituents of which are localized in that special organ. Into clinical dermatology we therefore can admit: 1. The

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deformities. 2. The affections which are caused by the direct influence of mechanical, chemical and thermic forces and are restricted to the skin during their entire course. 3. Pathological processes the cause of which is localized in the skin and there develops its effects, particularly if other organs of the body are not affected by it. 4. Pathological processes which appear only as symptoms of some internal trouble, but in which the cutaneous symptoms are clinically so prominent that the patients usually come under the observation of the dermatologists.

The last part of the book is devoted to the demonstration of the necessity of a classification and of its principles and to the classification itself. The four conditions for the admission of diseases into dermatology conveniently furnish four classes of diseases: deformities, lesions (here in the original sense of the Latin, Læsio, the injury), cutaneous diseases proper and symptomatic diseases.

To briefly sum up, we find that *Philippson* criticises the dermatology of the present day for still paying too much attention to the surface appearances of the diseased skin, particularly to the so-called elementary lesions, without allowing due weight to the anatomical process which produces them; for describing the diseased skin in terms entirely at variance with the common rules and customs of general pathology; for making the morphologic features the foundation of the diagnosis without giving proper attention to their anatomical character and to general symptoms, and for setting up an unscientific standard for the definition of single diseases. To improve the state of dermatology he proposes the creation, or rather elimination, of a general pathology of the skin in conformity with the general pathology of the human body, and of general diagnostics founded on pathological anatomy; he demands that the examination and description of the morbid conditions should be made with the sole view of discovering the anatomical process and its genesis, that under all circumstances an anatomical diagnosis should first be made, and that the diagnosis of a disease itself should not be insisted on unless all conditions for the construction of a clinical entity should be fulfilled. This I do not understand to mean that we should have to go through all the formalities in every case of an acknowledged disease we meet, and should not profit by our clinical experience, making a snap diagnosis in our practice after having made the anatomical diagnosis in a sufficient number of similar observations. But in cases which are not immediately classified, the procedure should be as demanded by

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Philippson and should be adhered to in teaching under any circumstances.

In trying to judge of a plan for reform, it seems to me there are always three questions which offer themselves for consideration: 1. Is there anything to reform? 2. Is the proposed plan practicable? 3. Will its execution really reform?

The answer to these questions in regard to *Philippson's* writings I should have preferred to leave entirely to the members of this Association, particularly to those who as teachers are more competent and in a better position to judge than I am myself. But as I have promised a critical review, I cannot entirely shirk that duty. Personally I am convinced that *Philippson's* criticism is indeed in a large measure justified. If I had not had a feeling of dissatisfaction with the state of dermatology before the study of this article, I should not have taken the interest in it which I almost unwillingly did, but during its study I found much detail which I am sorry I could not lay before you, particularly from citations from other authors, that clearly shows how prejudice and too devoted adhesion to traditional doctrines pervert honest studies. I believe, however, that what Philippson calls the anatomical-genetic tendency is much more deeply rooted and more widely developed than he makes us believe, particularly among the younger workers, but that it does not avow itself with sufficient energy, partly on account of a reverential reluctancy to break with old traditions, partly on account of a conscientious consciousness that it is not yet in the position to satisfy all reasonable demands that could be made upon it. This is particularly true of the microscopical work to which the time and labor of dermatologists has been so much devoted.

In answering the second question, whether the reform or new departure demanded by Philippson is feasible, I do not hesitate to say that I do not only consider it practicable, but almost the only natural way as soon as we try to think and work scientifically, and that I have no doubt that sooner or later such a plan will be generally accepted, though it may take time, perhaps a generation or more, before this will be accomplished. Besides, the standpoint assumed by *Philippson* is by no means an entirely new or startling one. To mention only the names of *Simon* and *Unna* as the foremost promoters of the histopathology of the skin, none more than *Auspitz* has represented the anatomical-genetic tendency in his System der Hautkrankheiten, and particularly in *Ziemssen's* book on the diseases of the skin. Other

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authors of books, American and foreign, have started in a similar vein, but finally they cannot extricate themselves from the influence of the elementary lesions. But more than that, I dare say that every one of us has already followed *Philippson's* plan, consciously or unconsciously, in the study of skin diseases. It is by no means claimed that the reform *Philippson* offers is complete or perfect; to the contrary, he is fully aware that a great deal of work has still to be done before the desired improvement in dermatology can be accomplished. But if the greater part of the work that is now scattered and squandered on useless, misdirected investigations could be united and concentrated under one common plan, the results would be much more rapid and satisfactory. That we shall experience a good deal of awkwardness and difficulty in first trying to adhere to *Philippson's* methods there is no doubt, but I am also confident that after a few trials we shall find it much easier to do so and gather sufficient recompense for our work. For I am convinced, to answer the third question, that the realization of *Philippson's* plans would work a real reform of dermatology; that our description would be freed of a great deal of the confusion, of the *embarras de richesse* in regard to terms and names; that it would be brought into closer relations with general pathology and general clinical medicine, and would lose a great deal of the difficulties that now surround its study and its general understanding.

Evening Session.

DR. SAMUEL SHERWELL, of Brooklyn, read

A NOTE RELATIVE TO A CASE OF PELLAGRA (WITH PHOTOGRAPHS)

The extreme rarity of pellagra in the United States is substantiated by the reports of the Statistical Committee of this Association, which in the last twenty-five years have included no instance of the disease.

Among the immigrants received at Ellis Island, New York, was a man, examined by me on the 28th of May last, named Mosso Rontino. He was aged about 30 years, and was then found to be considerably emaciated and in a condition of marasmus. He had suffered from his present disorder in successive attacks for a series of years, each succeeding return being more severe than that which preceded. The lesions of the skin exhibited were most plentiful on the distal portion

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of both extremities, especially the upper. Here was found a somewhat extensive erythematous redness involving the palmar and also the plantar surfaces, the integument having a somewhat peculiar discoloration suggesting the hues of a dead autumn-leaf. There was enormous thickening and exfoliation of the integument of the palms and soles, with a tendency in places to gangrene. The lower third of the arms and the anterior tibial regions were similarly involved. The affected regions were not the seat of actual pain, though the patient suffered from intense discomfort. There seemed to be a partial analgesia. The fingers, on account of the inflexibility of the tissues, could be but partially flexed.

Great difficulty was experienced in securing imperfect photographs of the condition of the patient on account of his unwillingness, force being required in order to control him. Such as they are, the photographs show the dorsal and palmar aspect of the hands and the lower region of the arms.

One of the physicians who saw the patient suggested that the case might be one of Besnier's "Erythrodermie exfoliante," but neither the history nor the appearance of the lesions suggests to me the possibility of such a diagnosis.

About twelve years ago I reported to the New York Dermatological Society a case of pellagra typical in character and well advanced. After two or three months of careful observation the patient died of marasmus and a low form of subacute meningitis.

The first of these patients was an Italian sailor living before the mast in small and poorly outfitted Italian brigs sailing from the port of Genoa. In this class of vessels each sailor is in the habit of supplying himself with provisions of his own purchasing at home, which he brings aboard ship and cooks himself at the galley-fire. It is therefore possible that they may live for months after leaving port on fungus-infected maize with which each makes his polenta, its pathogenic tendencies aggravated by life in damp and fetid forecastles.

DR. CHARLES J. WHITE, of Boston, presented a paper on

THE CLINICAL STUDY OF FOUR HUNDRED AND EIGHTY-FIVE CASES OF NAIL DISEASE

This investigation covers a period of three years and represents the material collected at the Massachusetts General Hospital and from

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private practice. At the time it was begun there was no monograph covering the whole field of nail pathology, but since that date Heller's most important work has appeared and our Association has held a symposium upon nail diseases, so that my early reasons for this study have lost their importance, but nevertheless I think the tables which I have compiled will add something to our meager knowledge of this difficult subject.

As will be seen from the tables which have been given you, there are six conditions which provide 404 out of the 485 examples of pathological nails, and in the short time at my disposal I shall describe the nail changes in these six diseases, leaving to my tables the details of the other twenty-nine affections in which nail changes were noted.

Eczema produces the most frequent examples of nail disease, furnishing 107 of our cases. The changes observed in this disease may occur in the nail walls, matrix, bed and plate, and are produced by the same causes that bring about an eczema of the skin. The involvement of the nails before the age of 20 is distinctly uncommon. The disease prevails all through adult life up to the age of 70, when it diminishes in frequency. In the acute form the nail walls are red and swollen, the plate loses its normal convexity, pain is felt in the bed, the plate becomes rough, the luster vanishes, discoloration is present, and soft spots appear in the plate which later form minute, punctate depressions. If the cutaneous disease continues, the nail exhibits one or more of the following conditions: Transverse depressions or ridges, vertical ridges, hyperkeratosis of the bed with increase in the convexity of the plate and subsequent disappearance of this granular detritus and thinning of the plate with increased brittleness, exfoliation of surface cells of plate, leuconychia, or finally total loss of the nail. If the matrix is affected, a deep transverse furrow may result.

The pathological changes consist in the formation of eleidin and horny matter rather than the normal nail substance, together with œdema and cellular infiltration about the vessels of the corium.

Trauma or felon are two accidents which frequently befall the nails, and, when of slight importance or do not involve the matrix, the results upon the nail are unimportant. When, however, the matrix is affected, then we have a permanent change which will reproduce itself as long as the individual lives. The commonest of the constant deformities are transverse depressions, vertical ridges, hyperkeratosis subungualis with its usual sequelæ, and discoloration. The more unusual changes are round, punctate depressions, atrophy, exfoliation of surface of the

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plate, increased convexity, brittleness, opacity, koilonychia, gryphosis, leuconychia, transverse ridges, vertical depressions, invasion of air into the plate with subsequent crumbling or total loss of the nail.

Paronychia comes third in importance in my list, providing 68 cases. This is an acute or subacute process, and usually occurs in women who wash dishes or scrub floors, but any individual who subjects his fingers to a constant irritation may develop this localized condition. The most common nail changes are discoloration, transverse depressions and hyperkeratosis subungualis with its usual sequelæ. These consist in the lifting of the plate and subsequent discharge of the keratosic granules from the bed, leaving a flat, horny floor covered by a thin dome-shaped roof. All the other alterations of the plate noted in eczema may appear in paronychia, but the ones above mentioned are by far the most frequent.

Psoriasis holds a position almost identical with paronychia as a disturber of nail equilibrium, while the involvement of the nails in cases of cutaneous psoriasis is relatively much commoner than is the rule in eczema. The disease can exist also alone in the nails, but such a diagnosis is in truth a hazardous one. The condition is most frequently observed in men and between the ages of 20 and 40. The simplest cases consist of round punctate depressions in the plate, and Unna and Heller regard this symptom as pathognomonic of psoriasis, but I cannot agree with this position, as these lesions appeared in more than a quarter of my cases of eczema of the nails.

The commonest lesion in my experience is a more advanced condition, and consists in the changes subsequent to hyperkeratosis of the bed. This was noted in 57 per cent. of my cases. Two other common lesions are discoloration, which varies from yellow to dark brown, and transverse depressions, both of which occur in about 38 per cent. of the cases. After these four deformities, come in the order of their frequency simple hyperkeratosis subungualis, brittleness of the plate, thinning, opacity, vertical ridges, exfoliation, increased convexity, total loss of the nail, broken nail, koilonychia, disappearance of luster, transverse ridges and vertical depressions.

Pathologically, the psoriasic papules form on the bed, raising up the plate and allowing the air to be imbibed by the plate cells. This leads to opacity and discoloration. In the subungual corium there is great dilatation of the vessels instead of the inflammatory œdema observed in eczema. The prognosis is almost always good, but I have

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observed severe cases of many years' standing where the nails have completely fallen, never to return again.

Dermatitis professionalis.—Under this title will be considered the 62 cases of acute dermatitis of the hands and fingers which can be directly attributed to some noxious occupation or to some chance poisoning of the skin. Here the commonest symptom is koilonychia, which appeared in about 40 per cent. of my cases. Other frequent changes in the nail are round, punctate depressions, vertical ridges and hyperkeratosis subungualis with its usual sequelæ.

Syphilis of the nails is not a common condition, and forms only 5 per cent. of my cases. Like the general constitutional disease, syphilitic manifestations on the nails may be divided into those resulting from the primary lesion, from the secondary eruption, and from the late changes of the disease.

A chancre on the nail wall is followed in a short while by a series of parallel, transverse depressions, with or without discoloration, or the change may be more intense and the plate will ulcerate and drop off in part or in toto.

The secondary stage of the disease shows itself usually in one of two ways: first, by the formation of a papule on the bed, and second, by a general, moist ulceration of the nail. The formation of a papule on the bed is indicated by a red spot in the plate which becomes yellow with the subsidence of the lesion. The plate over the papule becomes thinner and may be broken even, while the horny layer of the bed thickens, and as a result leuconychia may ensue. The secondary ulcerations of the nail are the most frequent syphilitic manifestations, and the disease is characterized by the large percentage of the nails involved. The first signs are redness and swelling of the last phalanx, accompanied by pain. The nail walls become affected and the epidermis is raised by fluid and finally ulcerates. Pus appears from the eponychium and from under the plate on the sides and causes the plate to look yellow. Blood is imbibed by the plate cells, and the nail becomes red and later black. Ulcerations appear along the bed, and as a result the nails fall. If the matrix is affected, nails may not be reproduced or may grow again gryphotically deformed. The restitution of such nails is always a long and tedious task, and must be accomplished by mild local antisepsis and prolonged general antisyphilitic treatment.

The nail lesion associated with late syphilis usually assumes a dry form and has been termed scabrities unguium syphilitica or onyxis

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craquelé. At the root of the nail, white, punctate depressions form in vertical series, brought about by parakeratosis and acanthosis of the bed. These pathological processes prevent the formation of onychin, and as a result we find hyperkeratosis of the bed or a thickened, yellow, crumbling plate.

Although favus and ringworm of the nails are very rare conditions, still I want to add a few words about them, for, in my opinion, they are two conditions which I feel that an expert ought always to diagnosticate provisionally when confronted with severely abnormal nails.

Tinea tricophytina of the nail is a very rare condition and is usually caused by the megalosporon. The disease first appears at the distal end of the nail and gradually spreads backwards. The plant first attacks the bed, producing an opacity and discoloration of the plate, which usually assumes a whitish-yellow tint. As the disease progresses the color darkens even to a brown, but never reaches black, as is so often the case in favus. Coincident with the progressive color changes, the bed becomes more and more hyperkeratosic, the plate is raised more and more from the bed and shows transverse depressions, transverse elevations or vertical ridges, and finally the plate itself is attacked and becomes rough on the surface, exfoliates in lamellæ, atrophies or splits, and is finally cast off. The disease is essentially a very chronic one, and even when properly treated requires at least two years for its thorough eradication. If left to itself the plant has been known to remain active in the nail substance even up to thirty years. A positive diagnosis is extremely difficult, for even although we have excluded to our satisfaction all other possibilities, the spores may elude the most diligent microscopical investigation; in fact, it is only when one has demonstrated conclusively the characteristic spores that one can state positively that one is dealing with ringworm of the nail. On the other hand, if the nail presents the clinical characteristics above enumerated, and ringworm is present elsewhere on the patient's body, we have a certain right to assume that the nail is similarly infected.

Tinea favosa of the nails is more commonly observed than ringworm, but the clinical appearances of the two diseases are quite similar. The plant attacks the distal end of the bed and produces an opacity and discoloration of the plate. The hyperkeratosis spreads backwards and the plate is raised from its bed, becomes darker and darker in color, even to blackness, and its surface shows transverse depressions

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or ridges. Often the substance of the plate is attacked and assumes a honeycombed appearance which soon leads to crumbling and splitting and final loss of the nail, or the hyperkeratosic granules are extruded from the bed, leaving, as sometimes occurs in ringworm, a hollow space underneath the atrophied and brittle nail plate.

The disease may be caught from domestic animals or from one's neighbors, and often occurs in two or more members of the same household. The Russian Jews seem to be particularly liable to infection, and all my eight cases occurred in people of this race.

Histologically, one finds a thickened prickle layer of the bed, elongated papillæ and an enormously hypertrophic horny layer in which the Achorion Schoenleinii appears. The fungus is not so abundant at the distal end of the plate as farther back, and its mycelium grows parallel with the cells of the stratum corneum. The process is much more chronic than in the scalp, and follows closely the characteristics of ringworm, both in its life history and in its treatment.

This brings me to the end of the diseases which I shall here describe, and for want of time I leave to you the interpretation of the tables which I have prepared from my detailed notes. I think from what I have read to you this evening and from what you can see on these tables that you must agree with me in the conclusion that nobody at the present time can claim sufficient knowledge to make a positive diagnosis without the aid of the microscope, when one is confronted by the presentation of diseased nails, unless the skin is also attacked, for we can all see how the same lesions appear over and over again in almost all of the diseases.

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CLINICAL CHARACTERISTICS OF 485 EXAMPLES OF NAIL DISEASES.

Round punctate depression	27	1	11	27	14	2	2	2	89
Transverse depression	51	26	57	27	17	6	2	3	213
Vertical depression	1	9	4	1	2	1	1	1	20
Vertical ridge	28	22	10	7	11	5	1	1	99
Transverse ridge	4	4	12	3	4	1	1	1	40
Discoloration of plate	16	12	33	27	13	11	8	7	143
Hypertrophy of bed	14	18	8	22	15	5	5	4	101
Atrophy	14	2	9	12	15	5	4	3	72
Separation from bed	24	15	21	37	13	11	5	7	141
Exfoliation on surface	13	5	19	8	7	7	1	1	63
Brittleness	22	6	11	14	18	4	6	1	87
Flatness and koilonychia	11	9	7	5	25	1	5	2	70
Opacity or honeycombing with air	5	1	4	12	1	8	2	1	36
Crumbling with erosion	1	3	2	7	2	2	3	6	27
Lustreless	11	2	5	4	1	2	1	2	29
Broken nail	3	1	11	6	3	1	2	1	31
Anonychia { permanent	10	7	9	5	4	6	1	1	52
Anonychia { temporary	11	8	3	6	3	2	1	1	43
Increased convexity	4	1	1	1	1	1	1	1	7
Onychogryphosis	5	1	1	1	1	1	1	1	8
Leuconychia	1	1	1	1	1	1	1	1	1
Hyperæsthesia	1	1	1	1	1	1	1	1	1

	Number of Cases.
Eczema.	107
Trauma or felon.	72
Paronychia.	68
Psoriasis.	67
Professional dermatitis.	62
Syphilis.	28
No apparent cause.	9
Tinea favosa.	8
Alopecia, bad teeth, bad nails.	5
Xeroderma.	5
Arthritis deformans.	4
Dermatitis herpetiformis.	4
Burn.	4
Pus under nail.	3
Biting of nails.	3
Acromegaly.	3
Dermatitis exfoliativa.	3
Tinea trichophytina.	3
Keratosis pilaris.	3
Tuberculosis verrucosa.	2
Nervous shock.	2
X-ray dermatitis.	2
Vitiligo.	2
Pruritus.	2
Psorospermosis.	2
Raynaud's disease.	2
Ichthyosis.	2
Argyria.	1
Acro-arthritis.	1
Phthisis pulmonalis.	1
Hydro-æstivale.	1
Pityriasis rubra pilaris.	1
Injured spine.	1
Myxœdema.	1
Neurasthenia.	1
Totals.	485

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DR. FREDERICK J. LEVISEUR, of New York, read a paper on

THE CLINICAL ASPECT AND TREATMENT OF SOME AFFECTIONS OF THE FINGER-NAILS

If the statement of some American and foreign authors be true, that is is quite impossible to differentiate clinically between eczema, lichen, psoriasis on the one side, and onychomycosis trichophytina on the other, but that the diagnosis simply rests upon the finding of the trichophyton fungus, this interesting affection of the nail will continue to occupy an anomalous and subordinate position in the great system of cutaneous diseases. Owing to the rarity of the disease we are much in want of accurate description of typical cases enabling us to recognize the affection by some characteristic features, and assign to the microscope, as in most other diseases, the rôle of furnishing corroborative evidence. The disease usually begins with a yellowish discoloration of the nail-plate. The affected portion of the nail loses its luster and becomes opaque and thickened. If it starts from the free border, a hyperkeratosis of the bed of the nail soon appears, forcing the nail-plate upwards and often producing an onychogryphosis of mild degree. This moulage shows the thumb-nail of the left hand of a girl 13 years old. There existed no other evidence of the disease elsewhere on the body of the child or in her family. The affection was of one year's duration. The girl often played with a cat which, as the mother reported, was suffering from a peculiar skin eruption. The cat finally fell sick and died in the house. After a long search the fungus was found in the scrapings taken from the diseased nail and soaked in a 10 per cent solution of caustic potash. Unfortunately I had no opportunity to make a culture or inoculate animals, and therefore am unable to say if the fungus was the trichophyton megalosporon ektothrix, which one would expect to find in such a case.

As a rule the disease is not given the chance to spread in an undisturbed manner, as happened in this case. Accidentally or by intervention the affected part of the nail-plate, or at least its upper layers, are removed, and a hard, inelastic, ragged mass remains, which is of a dirty brown, sometimes almost black, color. In this condition it is much more difficult to recognize the disease clinically, but somewhat easier, I think, to find the fungus. There is no pain present nor any tendency to suppuration. Meissner and Heller have described cases in which the affection was primary, and Johnston has reported four

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cases in which there were no other lesions present. Grindon says that heteroinfection from men is uncommon, but that its occurrence as a familial disease has been noted several times. The well-known fact that a comparatively large number of cases quoted in literature concern old men has been explained on the ground that senile changes of the nail render it particularly liable to infection. This may be so; but want of occupation, making the washing of the hands not so much a necessity, may have something to do with it, or perhaps more so the fact that old men are much inclined to befriend dogs and cats. Domestic animals, I think, constitute very often the source of infection, and it would be well to bear this in mind every time when inquiring into the history of a case of ringworm of the nail.

In regard to the therapy of the disease I can offer no new suggestions. Nor has it been my good fortune to follow up a case to a perfect cure.

I should like to call your attention to an affection of the nails which is probably of parasitic origin, though not due to any of the well-known vegetable parasites. I have only seen it in adults, where it is found usually in combination with seborrhoic eczema and pruritus ani or scroti. It attacks the nail-plate primarily, starting from the region of the lunula, and very quickly spreads all over the nail. The individual lesions are minute, round, shallow holes of the size of a very small pinhead, arranged sometimes in regular concentric lines. The entire surface of the nail-plate is covered with them. When the disease starts on its way to recovery the lesions slowly disappear, beginning at the proximal end. The nail is not shed, but the clearing-up keeps pace with its physiological regeneration. The affection somewhat resembles that described by Hebra, Lailler and Schütz (état pointillé des ongles, thimble-nail), which was found to be a characteristic and early symptom of psoriasis. But it never begins, like the latter, with bright red points, hyperæmic in character, in and around the lunula. The individual lesions are of much smaller size. Furthermore, I have never seen it together with psoriasis elsewhere on the body.

Of ten cases which I have collected so far, three were physicians, one a lawyer, one a waiter, one a piano-maker, two women occupied with ordinary housework, and two business men. All the patients in common presented the subjective symptom of itching of some part of the body, giving rise to considerable scratching with the nails. The men's attention was called in every instance to their diseased nails by the absence of the natural gloss of the nail-plate, giving it a dis-

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agreeable, dirty appearance. Five cases had a seborrhoic eczema, some on the scalp, some on the body, or both. In one male case there was present a seborrhoic eczema of the scalp and body, and pruritus ani. In another, pruritus of the scrotum, thighs and testicles. The women, who were dispensary patients, hardly knew of the presence of this affection. One woman had a well-marked general pruritus.

As a rule a number of fingers are attacked. In one case it was only the thumb of one hand. The disease has no tendency to appear symmetrically. Frequent manicuring or vigorous therapeutical measures aggravate the condition, and often obscure its true character by producing an eczema of the surrounding skin. If an alkaline solution is applied to the diseased nails they are liable to assume a dirty brown color. This is particularly the case after an application of Liquor carbonis detergens, the discoloration remaining for a surprisingly long time.

As stated above, a microscopical search for vegetable parasites made in most of the cases was futile.

In regard to treatment, I have found that salves do not make any impression upon the disease. In four cases a cure was effected by the use of a 1 per cent solution of permanganate of potash. The fingers were bathed for about ten minutes twice a day, and the discoloration due to the permanganate then removed by a second bath consisting of an oxalic acid solution (2 per cent).

Though the material which has come under my observation is as yet too small to venture a positive statement, I am inclined to think that the disease has a certain connection with Unna's seborrhoic eczema, or the parasitic eczema of American writers, but no relation whatsoever with ringworm or psoriasis. It also differs clinically from ordinary eczema. Perhaps the gentlemen present, whose material is far larger than mine, have often come across this affection, only classifying differently. The disease is, I think, not rare, many cases being regarded either as ordinary eczema or ringworm.

The occasional combination of pathological changes of the nails and pompholyx (cheiropompholyx) seems to have escaped the attention of authors who have written about this disease. The latter deserves an independent position in the system of skin diseases, not on account of histological peculiarities, but of its well-defined clinical features. In cases with severe attacks occurring at short intervals, the matrix of the nails is slightly affected. Consequently a new nail is formed, pushing the old one forward very much in the manner of an

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ordinary infectious onychia. This moulage shows the condition of the nail as the result of a previous attack, while on the side of the fingers lesions due to a new attack may be noticed.

The ordinary eczema localized on and around the nails, of which you see an illustration in this moulage, can be recognized easily, and only in exceptional cases is it necessary to make the diagnosis *per exclusionem*. There is, as a rule, a history of chemical irritation, and in many cases it is quite difficult to draw the border-line between this affection and onychia of a very mild degree. Here it must be constantly borne in mind that the changes of the nail-plate depend largely upon the amount of interference with the matrix. This ground has been thoroughly covered by the paper read by Dr. Pollitzer, of New York, at a meeting of the American Dermatological Association, and I shall only relate a case occurring in my practice.

Mrs. S., 67 years old, had had eczema of several nails on each hand for two years. Suddenly an onychia developed on one of the diseased nails, and was followed shortly afterwards by an erysipelatous rash spreading over both hands, arms and feet. The temperature was 101° at night for a few days only, when it became normal. There was present great general weakness, probably due to the sleeplessness caused by continual severe itching and burning. Finally blebs of the size of a quarter began to form, containing turbid fluid. They were opened and a wet dressing with liquor Burowi 5 per cent applied to the affected parts. After the condition had somewhat improved, the fingers, the hands, arms and feet were bandaged with strips covered with a 10 per cent salicylic soap plaster devised by Prof. Pick and modified and introduced into this country by Dr. Klotz, of New York. Under this treatment the patient recovered inside of six weeks. Three nails on one hand and two on the other were shed.

During the attack the two daughters of the patient, while nursing their mother, developed at various times an ordinary infectious onychia. This small family epidemic reminds one of the general epidemics reported by Eddy as occurring among young sailors in 1834 and 1835, and similar outbreaks existing in England, Scotland, France, Italy, the United States, the Antilles and the Cape of Good Hope, from 1847 to 1854 (Heller). The case also may serve as an illustration of the possibility of the development of a serious streptococcic infection of the skin from a chronic eczema of the nails by the transitory stage of an onychia or paronychia.

Of the nail affections due to occupations requiring the handling of

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chemicals I shall only mention those attacking workmen engaged in the manufacture of Paris green, and fur dyers. The chemicals containing a large percentage of arsenic produce deep ulcerations, particularly in the region of the lunula, but also of the nail-bed on the sides of the free edges. They have a dry, almost black, mummified basis, and cause very little pain. If left alone, they show no tendency to suppuration or granulation, and are liable to end in extensive mutilations of the phalanges. Packing these ulcerations with moist iodoform gauze acts almost as a specific, and a foreman of a factory of Paris green, who, together with several workmen, was under my treatment for this affection of the nails, reported that since the precaution was taken to bandage every suspicious sore of the fingers with iodoform gauze, no new cases occurred. Workmen engaged in the dyeing of furs in this country frequently suffer from an affection of the finger ends and nails which is characterized by large, flat, wart-like excrescences of the skin around the nail, and a great amount of subungual hyperkeratosis. These black, hard, irregular masses sometimes become fissured and extremely painful, incapacitating the men from work for a considerable time. The nail itself is blackened, much increased in thickness, almost as hard and smooth as glass, and unless trimmed continually will develop a marked onychogryphosis. The so-called imitation sealskin dye seems to be particularly liable to produce the disease. Pyrogallic acid, aniline black and peroxide of hydrogen are combined in many of the dye-stuffs used, and it is difficult to tell which of these substances must be held responsible. Individual susceptibility certainly counts for a great deal, and I have had some patients who had to give up their occupation of dyers on account of the impossibility of avoiding this painful affection.

Aside from the injurious action of chemicals, the nails are also affected mechanically during the pursuit of various occupations. I have here a moulage of the hand of a newspaper boy whose main work consists in sorting the daily papers. The somewhat sharp edges of the paper cut right under the nails, wearing away the nail-plates almost down to the lunula, similar to morsura unguium. Both hands are equally affected. Another case here shows a hypertrophy of the nail in a cigar-maker. While at work stretching the tobacco leaves, he uses his nails exactly like an instrument, and in the center of the free edge, extending backward, a spine-like, horny processus has formed, which supports the nail in a curious manner, making it especially useful for his occupation.

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FIG. 1.

Nail of little finger undermined by disease; surface having retained normal smoothness. Bald spots of scalp, the result of favus.

FIG. 2.

Little finger of same patient five weeks after avulsion of nail, showing growth of new and healthy nail.

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Compared with ringworm of the nail, favus is by no means as rare and much easier to diagnose. This is mainly due to the fact that favus of the scalp is most frequently found simultaneously, or at least the characteristic traces left behind by the ravages of the achorion are still present. In the accompanying photograph the hand of the patient was placed on the head, thus showing the affected finger as well as the slightly depressed bald spots on the scalp due to favus.

The most marked clinical symptom of the disease, when attacking the nails is, I believe, the formation of hollow spaces, more or less filled with detritus, starting from the free edge of the nail towards the lunula. The nail-plate itself is left intact, the mycelium growing best on a soil which is little exposed to air or the changes of temperature. The nail-bed, after removal of the horny shell, shows an irregular lamellated surface with shallow depressions here and there. The latter are favorite places for the accumulation of the fungus, and really the nearest approach to the formation of scutula which I have ever seen. Sections of the two nail-plates of another case, of which I take the liberty of showing you a moulage, were examined after avulsion very carefully and found to be perfectly free from the fungus, while the latter was found in scrapings taken from underneath the edges of the plate. In this case, which concerned a nurse 21 years old, born in Ireland, there were also present large bald areas on the scalp, the unmistakable remnants of an old favus. The patient stated that the affection of the scalp dated back six years, while that of the index and third finger of the left hand was of four and three months' duration respectively. She was put under ether, and after disinfecting the finger thoroughly with soap, alcohol and a bichloride solution, both nails were extracted by means of Post's nail forceps. The avulsion of the nails was accomplished without difficulty. After the operation the fingers were covered with a little iodoform gauze and protected by a cap formed of small bands of adhesive plaster which finally were painted over on the extensor surface with flexible collodion. This dressing was removed after two days, and from that time on renewed daily after bathing the finger in sublimate solution. When the new nail began to show itself the bathing was stopped and the nail-bed in front of the new nail painted daily with a 1 per cent. solution of sublimate in tincture of benzoin.

In a case published by me in 1898 the same treatment was resorted to, only with this difference, that the hollow spaces were plugged with cotton and the nail-plate allowed to grow undisturbed. After five

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weeks the latter could be extracted with great ease under local anæsthesia with ethyl chloride.

Avulsion of the nails is, I believe, indicated in all cases where the disease has made considerable inroad. For milder cases a cure may be effected by Dr. Johnston's remedy, a saturated solution of potassium iodide and tincture of iodine. It is hardly necessary to warn against the application of strong caustics, as, for instance, caustic potash, or the use of the sharp spoon, because it is well known that the destruction of even a very slight part of the matrix will invariably result in the formation of a disfigured or distorted nail. Injury to the nail-bed, provided it be moderate, is not so important for the welfare of the nail. Small, deep, linear cuts or contusions of the nail-bed make more trouble than large, flat, superficial injuries.

The very curious disease called koilonychia (spoon-nail) is probably due to pathological changes of the nail-bed. In a case of mine of which this is a moulage, there is present, as in all similar cases of mild degree, a transverse elevation in the center of the nail, dividing the latter in two excavated parts, the distal one being more spoon-like in appearance. In koilonychia totalis the transverse ridge is absent. In this case there is very little if any subungual hyperkeratosis near the free edge of the affected nail. The wall near the lunula is somewhat retracted and slightly inflamed. The patient, a servant girl, is unable to give an account of the development of the condition. She says her finger was a little sore eight months ago, but never caused her any inconvenience since. The rest of her nails are normal.

I show you here the moulages of two hands representing a case of onychorrhexis, the disease which was described particularly well by Dubreuilh and Frèche. Heller considers it to be a variety of onychatrophy. In my case, not alone the smallness of the nails but of the entire end-phalanges must attract attention. The hands are those of a girl 11 years old whose nails have been bad, according to the mother's statement, since infancy. The thumbs show only small stripes on both sides as the remnants of the nail-plate, the greater part of which is transformed into a smooth pergameneous covering. Only the nail of the third finger on both hands and the fourth finger of the left hand are normal as regards the surface; the other nails are fissured longitudinally. There is no history of syphilis or rachitis, but the child, in body as well as mind, is poorly developed for her years. A sister, two years older, had perfectly normal nails.

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It is as yet uncertain if the affection can be called a disease or simply represents a symptom due to trophic changes of the nerves.

According to Bulkley's Statistics, there were found among 9,058 cases of extra-genital chancres 462 on the hands and fingers. This is a percentage of 5.1, which, considering the obvious frequency of exposure, seems to be remarkably small. But we have to take into consideration that physicians and nurses, who are most liable to contract the disease in this particular locality, have special reasons to conceal very carefully the nature of their affection. Of the 462 cases quoted above, 115 were those of physicians (25 per cent). It is a well-known fact that more gynæcologists than dermatologists become infected.

The occurrence of small sores on the walls of the nails is so trivial that patients, as a rule, only become alarmed when they notice that the wound persistently refuses to heal. A palpable induration is rarely present, except in cases where the sore assumes a fungous appearance, chancre fongeux (Fournier). If, aside from the syphilitic virus, infectious micro-organisms have gained an entrance into the tissues, the lesion will resemble an onychia or perionychia (chancre panaris) and may be followed by total destruction of the nail, or even of a part of the bony phalanx. Pronounced indolent swelling of the epitrochlear or the axillary glands higher up are rarely missing. After syphilis has become manifestly general, during its so-called secondary and tertiary stages lesions of the nails may accompany other characteristic eruptions of the skin. Cases in which they are the exclusive or the most salient symptoms are certainly rare. They seem to occur more frequently in women than in men. Take, for instance, the onyxis craquelé of Fournier, also called scabrities unguium syphilitica. When we read that among 9,000 syphilitics the affection only occurred three times, its clinical significance becomes somewhat questionable.

Heller's isolated papule of the nail-bed, another form of syphilitic onychia, is more important and interesting, in so far as it may constitute the only symptom of the disease present at the time. As a rule, only one finger is affected. No suppuration occurs, but part of the nail-plate situated above the lesion is destroyed, resulting in an irregular defect of characteristic appearance. Under specific treatment a new normal nail reappears.

The ordinary ulcerating onychia syphilitica may be regarded as one of those accidental localizations so peculiar to the disease. Why the region of the nails is affected in these cases, in preference to other

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parts of the body, is very difficult to explain. I believe that neither traumatism nor irritation are provocative factors. The nail-plate at first remains intact; its destruction or disfiguration after recovery depends upon the amount of injury done to the matrix.

Onychia maligna is a disease which chiefly occurs in children. It consists of deep chronic ulcers spreading peripherally from the sides or the basis of the wall of the nail. The floor of the ulcer is sometimes covered with dark necrotic tissue, or filled with fungous granulations; its borders raised and infiltrated, and diffuse red. In more than half of the cases a history of traumatism previous to the formation of the ulcer may be found, and I am inclined to agree with E. v. Meyer, who regards the process as a form of tuberculosis. I have seen a comparatively small number of cases in this country, perhaps owing to the fact that patients suffering from this affection apply to the surgeon more frequently than to the dermatologist. The general practitioner is at first sight inclined to make the diagnosis phagedænic chancre. The epitrochlear or subaxillary glands may be somewhat enlarged, but never to such an extent as to simulate the satellites of a primary lesion. In infants with hereditary syphilis the nails are occasionally absent at birth. In many cases they are perfectly normal, although the palm and fingers are covered with lesions. If ulcerations of the nails are present, the terminal phalanx is apt to become club-shaped and painful. The ulcers have thickened edges and a coppery areola. Psoriasis of the nails is most frequently met with in inveterate cases with simultaneous involvement of a large part of the cutaneous surface. The combined statistics of Jadassohn, Schuetz, Nielsen, Rosenthal and Heller show its occurrence in 9 per cent of the cases. In this country the percentage is, I believe, much lower.

It must also be borne in mind that in those cases in which the nails are affected primarily and no other lesions exist, the diagnosis which has to be made *per exclusionem* is only arrived at with difficulty. The état pointillé I have mentioned above. Ancel and Ménau's "rainure" transverse areas of depression accompanied by softening suggest the diagnosis, which, however, must be verified by looking for some other lesion on the body, or by carefully inquiring into the individual or family history of the patient.

The diseases which are at present most frequently treated by the X-ray (lupus and epithelioma) are rarely situated on the hands, and almost all the cases of affections of the nails due to Roentgen rays reported in literature concern either physicians or electricians engaged

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in the manipulation of the apparatus. Since we have learned to be more careful, the cases have become much more rare. The changes of the nail may or may not be accompanied by a dermatitis. Destruction of the matrix does not seem to take place, and an ultimate restitution *ad integrum* is the rule. Sometimes the nail-plate is shed, which means that its continuity is severed in the region of the lunula; it is then still attached to parts of the nail-bed and held in position by the walls. In other cases, where the injury to the matrix has not been so severe, transversal and longitudinal ridges, with roughness and brownish discoloration, make their appearance; however, not before a considerable time has elapsed since the exposure. When the characteristic dermatitis of the surrounding skin is present, the changes of the nails vary in proportion to the intensity of the skin affection. In Daniel's and Buri's cases the nail-plates were affected primarily and became black and abnormally hard. There has also been described a chronic dermatitis due to X-rays, and this is accompanied by similar but milder nail-symptoms.

Some general diagnostical value was formerly ascribed to the pathological appearance of the nails. The so-called Hippocratic curvature of the nails in patients suffering from tuberculosis of the lungs occurs, according to my experience, only when the patients lose flesh and become thin; though Vernois quotes 20 cases in which there was an embonpoint marqué. Transverse ridges representing the traces left by acute febrile diseases, such as typhoid, pneumonia, erysipelas, epididymitis, angina, parotitis, scarlatina, influenza and rheumatism, do appear, but not with such regularity as to be of great practical value. According to my own experience with dispensary patients—and I have examined many hundreds of them—a history of previous traumatism or inflammation could be found to constitute the causes of this abnormal condition of the nails. Well-marked longitudinal striation is either due to chemical irritation—for instance, vigorous antiseptic measures—or is a sign of advanced years or presenility. The observation that the lunula is, on the average, much smaller in the Semitic race than in others is perfectly correct. I cannot agree with the statement made quite frequently that rheumatic and gouty persons have brittle or reedy nails. In patients suffering from arthritis deformans—a disease quite as common in the poor as in the rich classes—when accompanied with deposits of urate of soda around the joints of the fingers, I have often observed a glassy and hypertrophied condition of the nails. In diabetes the toe-nails are much more often

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affected than the finger-nails. The same can be said of tabes dorsalis. The latter brings us to the large number of nail affections due to or associated with nervous diseases; but, as I have already taken up a great deal of your time, I will not attempt to go any further into the subject.

DISCUSSION

Dr. D. W. Montgomery.—I can say that punctate depressions in the nails are not, in my experience, limited to psoriasis. I have paid attention to this symptom for a long time, and have found it in quite a variety of diseases. In fact, I have had some personal experience in this line. I had a numbness in the distribution of the right ulnar nerve, and with that, punctate depressions in the right little finger-nail. I found that my symptoms were due to the effect of cold. In writing, my arm rested on a cold wooden desk, and this probably gave rise to a mild form of neuritis, which in turn caused trophic disturbances in the little finger-nail. The trouble disappeared as soon as I covered the desk with a sheet of blotting-paper.

Dr. Zeisler.—I have not lost my early interest in nail affections. I was somewhat surprised, in looking over Dr. White's table, that it included only eight cases of leuconychia, which we know is an exceedingly common affection. I had an idea that the percentage of such cases was much higher—as high as fifteen to twenty-five per cent. I would also like to ask why it is that his cases of transverse ridge formation includes such a small number?

Dr. C. J. White.—By ridge I mean an elevation without any depression.

Dr. Zeisler.—How can you get an elevation without a corresponding depression?

Dr. White.—Simply by localized hypertrophy.

Dr Zeisler.—I can bear out Dr. White in his statement that it is not possible to make a definite diagnosis from the appearance of the nails unless there are concomitant changes in the skin, because the changes in the nails are apt to vary greatly.

Dr. Elliot, of New York.—I do not know of any lesions which are more difficult to catalogue and to diagnose than those pertaining to the nails. I was exceedingly interested in these two papers, but I regret that no reference was made to affections of the nails due to systemic conditions, and outside of disturbances about the matrix or affecting the nail itself. I have seen a large number of cases of nail disease in the way of malformations, ridging, brittleness, disturbed nutrition, etc., which were absolutely traceable to gout, either existing at the time or previous to the onset of the nail affection. I have also seen a number of cases in which there were discoloration of the nails, detached conditions or slight malformation, which were clearly traceable to anæmia of various degrees, and in which the nail affection disappeared with

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the disappearance of the blood condition. In addition, I have had cases—which are also mentioned in literature—where there have been malformations of the nails due to constitutional conditions, as, for instance, in the case under care last spring of a woman who had reached the menopause. Her menstruation was irregular, and with every menstrual period there would be an interference with the growth of the nail in the direction of transverse furrows and a splitting off of the nail tissue. Interference with the growth of the nails also occurs during other systemic conditions, as fevers, etc. Any slight trauma may cause a distortion of the nail, or a defect or a malformation, or some change in its appearance, and I have had occasion to corroborate the observation of Heidingsfeld and others that trauma incidental to manicuring the nails is sometimes followed by the formation of a white spot.

As far as tinea of the nails is concerned, I do not believe that anyone can make the diagnosis without the microscope. The last case of supposed tinea which I saw was typical of that affection in so far as the gross appearance of the lesions was concerned, but the microscope failed to confirm the diagnosis. Upon examining the patient's blood, I found the hæmoglobin reduced to 40 per cent. and a corresponding decrease in the red cells. Upon treating the anæmia, the condition of the nails also improved. Some twelve years ago I had in my house a French cook whose sister had an affection of the nails which she stated had existed since infancy. Upon examination I found that all of the finger-nails were about one-quarter or one-eighth of their natural size. Upon examining parings from her nails under the miscroscope, I was surprised to find the most perfect specimens of tinea I have ever seen. In other cases, however, where the gross appearance of the nails was absolutely similar, I have found no evidence of tinea. In conclusion, I believe that in nail diseases more attention should be paid to general systemic conditions than has usually been done.

Dr. Allen, of New York.—I might mention two cases of favus of the nails which I have seen since the last meeting, and recently presented before the N. Y. Dermatological Society. The patients were two young women, and in both instances the diagnosis was confirmed by microscopic examination. In both cases there were no favus lesions on the body. One case closely resembled the case of hereditary dystrophy just shown by Dr. White, and it is a curious fact that the mother of this patient had some affection of the nails for many years which was said to resemble that of the daughter. I treated both these cases with the X-ray, and one of the patients, whom I just saw in the country, is not yet cured, and the other has disappeared.

I would like to substantiate some of the remarks made by Dr. Leviseur regarding the affections resulting from the use of dye-stuffs: these effects are not confined to the nails, but also include the hands and arms. I had arrived at the same conclusion as the reader of the paper that the new combinations of pyrogallic acid and peroxide of hydrogen that are now so commonly employed for dyeing purposes produce lesions of the nails and skin which we were not accustomed to see before.

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DR. HYDE.—I think that both Dr. White and Dr. Leviseur have furnished a very interesting contribution to this subject.

No attention has been called thus far to the individual idiosyncrasy of certain persons with respect to diseases of the nails. While we do not know the exact statistics, yet it is within bounds to say that at least 75 per cent. of syphilitic patients never have diseased nails, but when syphilitic nail disease does occur, it has been my experience to find a number of the nails affected. The same is true of psoriasis. The majority of psoriatic patients exhibit no nail symptoms, but when a psoriatic patient has diseased nails, the symptoms are often quite generalized, affecting all the nails very severely and obstinately, and often without generalized eruptive symptoms of the body.

In regard to what Dr. Elliot has said, I presume our statisticians have given us cases as they came under their observation, and have not touched upon nail diseases which did not happen to fall within the category of the 485 consecutive cases included in their table. We know that a number of general diseases are characterized not only by disorders of the nails, but even by loss of the nails. Exhaustive nervous disorders are often responsible for loss of the nails. In Charcot's disease I have seen the nail shed without structural changes in the nail tissue.

DR. C. J. WHITE.—My series of cases was based entirely upon skin patients, and therefore would not include generalized diseases of any sort. They were all ambulant patients and were suffering from disease of the skin only. It is quite true that transverse depressions of the nail may follow any inflammatory disease, localized or generalized, of the body.

DR. LEVISEUR.—In my experience, leuconychia punctata and striata is of comparatively frequent occurrence. Recently I saw four cases in one afternoon while examining the nails of forty-five dispensary patients, mostly women. As regards favus of the nails, I think under certain conditions we can make the diagnosis without the aid of the microscope, and that is, when we can see hollow spaces under the nail, while the nail-plate has a smooth surface. I have in a number of instances made the diagnosis upon such evidence, and was subsequently able to verify it by finding both clinical symptoms on the scalp and microscopical evidence of the fungus.

DR. SIGMUND POLLITZER, of New York, read a

NOTE ON THE HISTOLOGY OF HERPES ZOSTER

I desire to call to your attention a peculiar variation in the anatomical seat of the vesicles in herpes zoster. Clinically the case in which this variation occurred presented nothing at all indicative of the histo-genetic peculiarity. The patient was a young man, on whose left shoulder and arm there were three perfectly typical herpes groups, each made up of from five to fifteen vesicles. The smallest of these

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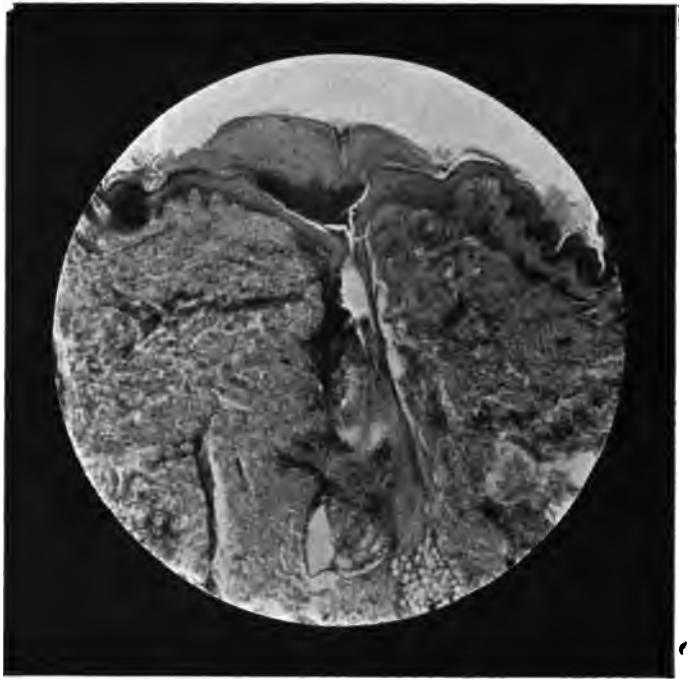
FIG. 1.

Vertical section of vesicle in herpes zoster.

FIG. 2.



Vertical section of hair follicle, showing vesicle at the orifice of follicle formed by the ascending exudation from the zosterian degeneration in the wall of the outer hair sheath.

Journal of Cutaneous Diseases, February, 1903.

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groups, situated on the outer side of the middle of the upper third of the arm, was excised and examined.

Before describing the specimens, permit me to recall for a moment the picture ordinarily presented in zoster—such a picture as that shown in Fig. 1 from a case of zoster lumbalis. You see a cutis moderately infiltrated with round cells along the lines of the blood vessels, and a rete in which, in a circumscribed region, there is a peculiar degeneration resulting in the formation of a characteristic multichambered vesicle filled with sero-fibrinous fluid and containing leucocytes and epithelial cells, many of which show peculiar degenerative changes, which have been the subject of much discussion and which need not detain us here. The changes in the rete begin in the lower tiers of cells, and the roof of the vesicle is formed by the horny layer, the entire vesicle lying within the rete.

The degree of small-cell infiltration in the cutis varies in different cases quite independently, I have noticed, of the clinical symptoms of inflammation. In some cases, apparently mild, I have seen the cutis the seat of an infiltration extending with interruptions from the hypoderm to the epidermis, and involving most markedly the coil glands, the pilo-sebaceous apparatus and the papillary and subpapillary layers. On the other hand, I have seen cases of severe confluent and hæmorrhagic zoster in which the infiltration seemed disproportionately small and was almost limited to the subpapillary layer. It would seem from this observation as if the small-cell infiltration were the direct effect of the primary lesion of the disease—be it nervous or vasomotor—rather than the reflex and secondary effect of the lesion in the epidermis.

This view that the primary or central lesions of zoster may manifest themselves in different cases by changes in different layers of the skin derives an interesting corroboration from the specimens which form the subject of this note. Cursory examination of the sections showed vesicles clearly enough, but the closest scrutiny failed to disclose any of the usual changes in the Malpighian layer of the surface. The vesicle was found to lie in every case directly over the orifice of a hair follicle. Its roof was formed of a thin layer of the stratum cornuum; its contents consisted of a clear serous portion above, and a mass of round cells below. The floor of the vesicle seemed to consist of the lower layers of the stratum cornuum, below which the rete Malpighii appeared, apparently unchanged. There was nothing of the usual multilocular structure of the zoster vesicle. Further inspection revealed the origin of this peculiar vesicle. The essen-

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tial histogenetic changes were found to lie further down in the hair follicle. The mass of round cells at the floor of the vesicle had the shape of an inverted cone, the apex of which lay just within the follicular orifice, and from this apex a line of round cells could be traced into the follicle alongside of the hair to a point about half-way down the follicle, where they were greatly increased in number and where a circumscribed portion of the outer root-sheath of the hair was seen to have undergone a degeneration analogous to that usually found in the Malpighian layer of the surface. In other words, we have here a herpes zoster affecting the rete Malpighii of the hair follicle exclusively. The vesicles which were manifested clinically, though in size, grouping and distribution indistinguishable from the vesicles of zoster, in point of fact were not at all the zoster vesicles as we are acquainted with them. They were a secondary effect of the real zoster vesicle, which was located in the root-sheath of the hair follicle, whence a sero-fibrinous exudation traveling up between the inner and the outer root-sheaths of the follicle raised up the horny layer at the follicular orifice, producing there the visible blister.

This form of zoster, which may be called zoster of the hair follicles, has not before been described, and for that reason I have thought it worth recording.

Dr. Isadore Dyer, of New Orleans, presented a

Report of a Case of Blastomycosis of the Skin

This case of blastomycosis is interesting because of its typical characteristics, its long duration in spite of active treatment, its gradual but progressive spread, the age of the patient and the general location on several regions of the body.

Dr. E. Denégre Martin, of New Orleans, first saw the patient, presenting lesions on the right cheek, both sides of the lower abdomen, both thighs and on the left leg on its outer aspect. As Dr. Martin described these, they were much like "indolent carbuncles" of slow development, all occurring about the same time, somewhat elevated, and when the outer covering broke there was a marked tendency to warty growth.

Acting upon the surgical indications, Dr. Martin freely curetted the several areas affected, using subsequent antiseptic dressings. All

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healed in due time excepting the patch on the leg; the areas on the face and on the abdomen and thighs scarred deeply.

In spite of varied and attentive care and treatment, the growth on the leg continued to grow both in area and in elevation, and assumed so formidable an appearance that the writer was asked to see the patient to determine the malignant, carcinomatous nature of the disease. Meanwhile a large lesion had developed on the cheek, just at the border of the former scar, and a small lesion appeared on the left thigh.

When first seen by me, the leg presented a growth of rather suggestive appearance of blastomycosis. There was a patch of some four inches in the vertical diameter and about two inches in width, kidney-shaped, with the concavity on the anterior side. The borders were most elevated and were distinctly fungating. In the concavity of the growth there was marked scarring.

There was a foul, offensive discharge, ichorous and of a dirty brown color, here and there dried and crusted on the growth. All over the diseased area were clots of papillary blood vessels, looking black, and making the appearance of dots over the diseased surface.

Subjective symptoms were negative, beyond the pain incident to the dressing.

The patient was a Scotchman, aged 77, formerly a stevedore and actively engaged in his occupation up to some four years previous, when he had retired. He lives under the most comfortable surroundings and in an atmosphere of domestic cleanliness.

His general health had been always of the best, and when seen his chief distress was the incapacitation incident to the confinement in the house caused by his leg.

No history of antecedent syphilis could be ascertained, nor of any tendency to cutaneous disturbances. There was present, and from time to time presented, a rather acute manifestation of seborrheic dermatitis, always, however, limited to the scalp and to the hairy part of his face, which he wears constantly clean-shaven.

At the second visit, cultures were taken on bouillon and on acid agar from the areas on the face and on the leg and thigh, in all some ten tubes. From these, several successful cultures resulted and were reported to me by Dr. John J. Archinard, in whose laboratory the cultures from my previous case (see *Journ. Gen.-Urin. and Cut. Dis.*, Jan., 1901) were identified.

The lesion on the right cheek healed kindly in less than a month under dressings of 10 per cent resorcin solution in water, varied at

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times by an application of an ointment containing 3 per cent resorcin and 20 per cent of balsam of Peru.

The story of the thigh and leg has been quite different.

The patient was placed under active treatment January 20, 1901, which has been constant until the present time.

Iodide of sodium was instituted at the start and has been maintained throughout, increasing at times to the maximum of 120 grains at the dose, three times a day. At times additional treatment was given, consisting in strychnin, cerevisine, biniodide of mercury, Donovan's solution of arsenic and mercury iodide, arseniate of iron. Occasionally it became necessary to remit the iodide, but it was always resumed and carried to a large dosage.

Locally mercurial plaster has been used for the most of the time, especially when the disease became aggressive and the vegetations were most elevated; it seems to have the effect of reducing these to the normal level of the skin better than other remedies, and the lesion seemed to grow worse under dry or moist dressings otherwise.

Ichthyol was used in watery solution and in ointments; iodide of lead, also resorcin solutions, mercurial ointments, iodine, nitrate of silver, wet dressings of bichloride, wet dressings of carbolic acid and of boric acid, sulphate of copper in 2 per cent watery solution, iodoform, etc.

During this whole period of treatment the leg has all but healed, while the thigh has quite healed within the past two months. Always, however, the leg would maintain one or two spots of vegetating lesions, fulminating from time to time, and covering, within a few days, the whole of the areas previously affected in that region. This usually was accomplished by the appearance of small bullæ, quickly crusting and pustulating and suddenly forming a papillary border, growing wider from day to day.

The present condition, as indicated by the second photograph, has been constant for now over six weeks, and the most of the area formerly affected is practically well, as a firm skin is now formed. The lower border of the present area presents a band of fungating lesion about a half inch in diameter and measuring an arc of about four and a half inches long. The photograph shows the advance of the disease from the upper third of the leg, moving downward in a wide band until it now is in the lower third, just above the ankle.

The treatment at present consists in the daily irrigation with a 2 per cent carbolized water solution, followed by a dressing with a

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powder consisting of equal parts of nosophen, orthoform, calomel, compound stearate of zinc and arrowroot, alternated with the mercurial plaster when there is any crusting.

Internally the treatment at present consists of a dosage of 90 drops of iodide of soda per diem and a sixtieth of sulphate of strychnin, three times a day.

If, after a reasonable time, the disease has not again spread, we shall curette and handle surgically.

DR. DYER read also a

PRELIMINARY NOTE ON POMPHOLIX AS IT OCCURS IN NEW ORLEANS

In the report sent by the writer to Dr. Hyde for the statistics of skin diseases as observed in public and private practice in New Orleans for the year of 1901, there were noted a total of eighty-eight cases of pompholix.

During the summer months in New Orleans, and also with the changing seasons in the spring and fall, both in hospital and in private practice, there have occurred a miscellaneous lot of cases which the writer has classified under the various titles from time to time adopted, discussed and dropped for some other term, until pompholix has survived as adaptable. Besides this, the doubt arising from misapprehension as to the exact distribution of the types of eruption in a proper division of nomenclature, compelled some license in their location.

So it is, then, that in the past years since the writer has been a member of the American Dermatological Association and has annually supplied a list of his cases, there have appeared in these lists a varied nomenclature of the same affection.

It is the purpose here to call attention to the various types as they occur, with some general description, in order to open the way to a subsequent presentation of an analysis of all the cases seen by the writer, with an idea of determining the exact position of the affection as observed in New Orleans, and evidently differing in frequency and in types from the disease called by the same name elsewhere.

According to the nomenclature now current with the American Dermatological Association, all of these eruptions will properly fall under the head of Pompholix; but, as these cases are so evidently associated with the function of the sweat gland apparatus, and as Pompholix seems to have been entirely dissociated from any such connection, it must mean either a reconsideration of the term or else a broader definition of Pompholix itself.

When the writer first came to New Orleans his previous observa-

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tion of the disease then called cheiro-pompholix, or dysidrosis, had been quite limited, and the condition was looked upon as a comparatively rare affection. In his recent text on Skin Diseases, Dr. Stelwagon defines Pompholix as a rare affection; in other texts, the description of the clinical features is really meagre. In New Orleans, the disease from April to November is quite usual, presenting, as a matter of fact, much more often for treatment than does malaria.

Since 1892, these cases have gone down in our records as hidradenitis, dysidrosis, hidrocystoma, according as the case presented.

Now, to describe the clinical appearances of these cases as they occur in our observation: There are three distinct types, differing sufficiently to require separate description.

1. The commonest variety finds its location on the feet; it is usually bilateral; it is almost invariably found on the solar aspect, the internal surface, between the toes, not infrequently extending to the ankles and to the lower third of the leg; the eruption is made up of pinhead sized vesicles grouped in clusters, irregularly composed of from one-half dozen to as many as fifty or more lesions, deep seated, uniform in size and with small tendency to confluence.

The contents of these vesicles is fluid, clear and transparent, somewhat sticky, but not profuse. When the lesions occur between the toes, the friction on these parts causes them to break more readily and they become raw quickly, the outline of the denuded surface assuming the configuration of the original cluster. Occurring on the soles, the groups contain fewer lesions than elsewhere; occurring on the sides of the feet, the clusters are composed of smaller lesions, not as deeply seated as those on the soles, and instead of discrete groups, these clusters seem to follow the distribution of the local nerves or blood vessels.

The history of these cases is nearly always the same. The patient will state either that there has been an unusual dryness of the feet, with lack of perspiration, or that at all times sweating is excessive. The feet burn and sting, sometimes swell, and when the vesicles begin to make their presence felt beneath the surface, there is intense itching, which persists until the scratching or rubbing break the tops of these and let the fluid contents escape.

It is unusual to find any complicating history of bad health, unusual occupation, excitement or other factor either producing or conducive to the disease. It is selective of no particular set of individuals, but occurs in adults usually, and in males oftener than with the other sex.

2. The eruption occurring on the hands presents much more the

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appearance of a true sudamina. Here, however, the eruption finds its location and distribution on both the palmar and dorsal surfaces. Closely aggregated, small pin-point to pin-head sized vesicles cover the backs of the hands or the palms, running up to the wrists or else, as is most often the case, these lesions cover the entire inter-digital spaces, extending also over the backs of the fingers as well. In milder types a few lesions are found disseminated over the palmar surfaces and between the fingers, often breaking and drying without any further concern to the patient.

The subjective symptoms are slow in developing and the eruption may be present for some days without producing any other sensation than that of tenseness. When the inflammation starts there is a great deal of swelling, inflammatory redness in the areas not covered by the vesicles, marked itching, but at no time as severe as that of the feet. The sensation most complained of by the patient is that of burning and that of formication.

It is usually a noteworthy clinical fact that when the hands are so involved, the feet are seldom affected, whereas the same obtains when the feet are severely affected.

3. There is besides the two above described types of this condition one other which assumes a general location and distribution. The eruption here is found on both hands and feet, in the axillæ, on the neck, the face sometimes, over the abdomen and in the folds of the crural, popliteal and elbow spaces.

The eruption may or may not be grouped. For the most part it is made up of single lesions rather uniform in size, that of a split pea, globular, not very deep seated, easily breaking, readily pustulating if neglected, and spreading somewhat rapidly when the weather is especially hot. In the folds of the skin these lesions are much more numerous, particularly in the axillæ.

As with the other types, there is more burning than itching, which develops as the lesions mature. This eruption is of rapid development, sometimes reaching its height in two or three days after it has begun. This type affects children quite often, while it is less frequent in adults than the others.

The treatment in each of these has been much the same, namely, strychnin internally, diuretics and astringent lotions. While eruption is extensive on the feet or on the hands, poultices or the free use of salicylic acid in alcohol prefaced the astringent treatment. Where there is much swelling soaking in hot starch water or keeping the region cov-

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ered with a two per cent solution of ichthyol in water on saturated cloths was adopted.

The close kinship of these eruptions; their occurrence in the summer; the evident relation to the sweat apparatus and their frequency in a sub-tropical climate make the whole subject full of question for discussion and, so far as the writer is concerned, for enlightenment.

DISCUSSION.

DR. KLOTZ, of New York.—Dr. Dyer has distinguished between pompholyx as it affects the hands and the feet. I recently saw a case in which the hands were very severely affected, lasting several months. This patient has been under my treatment several times for attacks of the same disease, and upon one occasion the feet were more severely affected than the hands, but during his recent attack, the feet were comparatively free from lesions.

DR. HYDE.—At the St. Louis and other hospitals in Paris, I have often seen French physicians make the diagnosis of pompholyx at a glance. The diagnosis there is exceedingly common, and our Gallican friends have very clean-cut, distinct ideas about it. The appearance of the feet, which Dr. Dyer described, is somewhat more common than is generally supposed, and in my judgment is generally traceable to transpiration from the surface of the feet. In the group of cases I have seen, and some Dr. Montgomery has seen also, we invariably examine the heart; and this has in so many instances revealed the presence of a cardiac lesion that I have been led to suspect the heart in every case of pompholyx affecting the feet, and in rare cases the hands. These patients may be divided into several categories. Some have a cardiac murmur, some merely a weak heart, and some have a tobacco heart. We find it also in women who take a great deal of tea. These patients are usually a little worse in summer, because of the laboring of the heart during the hot weather. The first thing is the passive congestion, particularly of the feet, because those extremities are at such a distance from the circulatory center. This is followed by a transudation of sweat or serum; then the maceration; then comes the dermatitis, and then the other cutaneous symptoms which Dr. Dyer has described. I would not like to make the assertion that all these cases originate from circulatory disturbance, but many of them do.

DR. RAVOGLI.—I fully agree with the opinion expressed by Dr. Hyde that the circulation has much to do with the production of these peculiar eruptions, but I think the vaso-motor nerves must also be taken into consideration. I have a little girl in my clinic who has a dystrophy of both hands; her hands are much larger than is natural for a girl of her age, and they perspire continually and to such an extent that she cannot apply herself to any kind of work on account of this excessive hyperidrosis. Occasionally large bullæ form on the hands and fingers; these last for a short period and then break, followed by excoriation and crusting. When the lesions have almost healed there is a fresh outbreak of these bullæ, and she is as badly off as before. She is

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anæmic and suffers much from nervousness. I treat her with iron and arsenic internally, and use resorcin and sulphur on the skin, but the result has not been very satisfactory.

DR. C. J. WHITE.—I do not quite appreciate the distinction between pompholyx and dysidrosis. I think the cases Dr. Dyer calls pompholyx we in Boston classify as dysidrosis or as hyperidrosis.

DR. DYER (closing the discussion).—The point raised by Dr. White is exactly the one upon which I would like to be enlightened. These cases have been variously reported as pompholyx, hydradenitis and dysidrosis. I think the latter does not appear in the nomenclature of the American Dermatological Association. I should be glad to call these cases dysidrosis, as I prefer that term to pompholyx, but it has been practically obliterated from the English text-books. The disease which is described in the books as pompholyx is not the disease as I see it, and the one which I have described here to-night. It is my own belief that these cases are of vaso-motor origin, and as the title of my paper states, this is simply a preliminary note. I intend to analyze these cases in the future and make as full a study of them as possible. These cases respond quickly to the use of strychnia, rarely lasting longer than ten days, excepting the more advanced cases, where the lesions have been aggravated by scratching, producing secondary changes. Ever since I have lived in New Orleans, I have myself suffered from recurrent eruptions of these lesions on the feet.

Second Day, September 19 — Morning Session

GENERAL DISCUSSION: ACNE VULGARIS

(A) ETIOLOGY AND PATHOLOGY.—BY DR. THOMAS CASPAR GILCHRIST OF BALTIMORE*

In 1893 Unna discovered the presence of bacilli, which he called acne bacilli, in comedones and acne pustules. He did not obtain any cultures of the bacilli nor did he carry out any experimental investigations. Unna declared that comedones were due to hyperkeratosis of the hair follicle and that this was caused by the presence and growth of the acne bacilli. He described the bacillus as being 5/8 to 3/4 μ. long and less broad, and that it was a pus producer. He found the bacilli in all comedones examined, but not in all pustules, although he asserted that the bacilli were the probable cause of the non-essential suppuration in acne.

*Read by Title.

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His grounds for believing that these bacilli were the cause of acne vulgaris were exceedingly slender.

In 1894 M. Hodara, a pupil of Unna, succeeded (?) in cultivating the acne bacillus from acne lesions. He used agar and glycerine as media. He planted the expressed contents of a comedo on agar, but did not succeed in obtaining a growth of the bacilli, although cocci and other organisms grew. By first soaking the comedo in absolute alcohol for two to four days and then planting on agar he succeeded in growing the bacilli. The description of the bacilli agrees with that of Unna's. A later observer, Bollack, was unable to confirm Hodara's results, as he always obtained a growth only of the staphylococcus albus. (The author could never get the bacillus to grow on agar.)

In 1896 Lomry carried out a series of observations concerning the cultures obtained from comedones and acne pustules. His results showed that stained sections of comedones revealed a rich flora of bacteria, most of which were cocci, and a few small bacilli, etc. Cultures were made on gelatine and agar. Lomry always obtained the staphylococcus albus in culture, never bacilli. He concluded that the staphylococcus albus was the cause of the disease and that the bacilli were a variety of the bacillus coli commune groups.

In 1894 Sabouraud, in his investigations on seborrhœa, found that all comedones contained small bacilli. Sabouraud formed opinions opposite to Unna. The former considered that seborrhœa was the primary disease and comedones secondary, whereas, Unna believed the reverse was the case. Sabouraud believed that the acne pustules followed the comedones as the result of secondary infection. This author also stated that a micro-bacillus, which is identical with Unna's acne bacillus, is the cause of seborrhœa. This bacillus is found in numberless quantities in all plugs squeezed out of sebaceous glands. He says the young forms of this bacillus are like a coccus, but the usual size is nearly 1 μ. long and $\frac{1}{2}$ μ. broad; in some specimens it was as long as a tubercle bacillus. Sabouraud did not obtain pure cultures of the bacilli direct from comedones or seborrhœa plugs. He alway got the staphylococcus albus as well as the bacilli to grow when using a special acid media made up of peptone, glycerine, acetic acid, agar and water. The bacilli were very slow in growing. To get the bacilli pure he allowed the culture from the comedo to stand two months when the staphylococci died and the bacilli continued to live. Another and quicker plan was to place the culture

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FIG. 1.

FIG. 2.

FIG. 3.

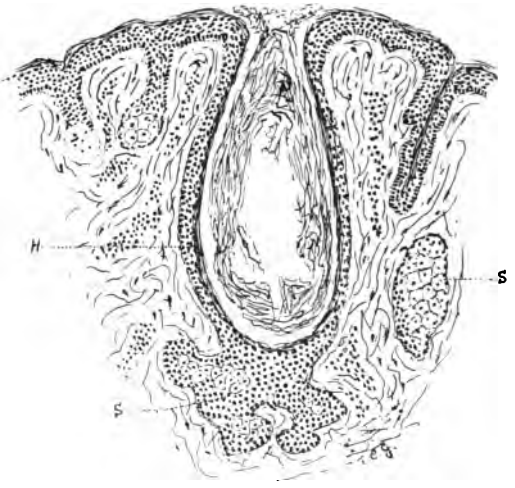
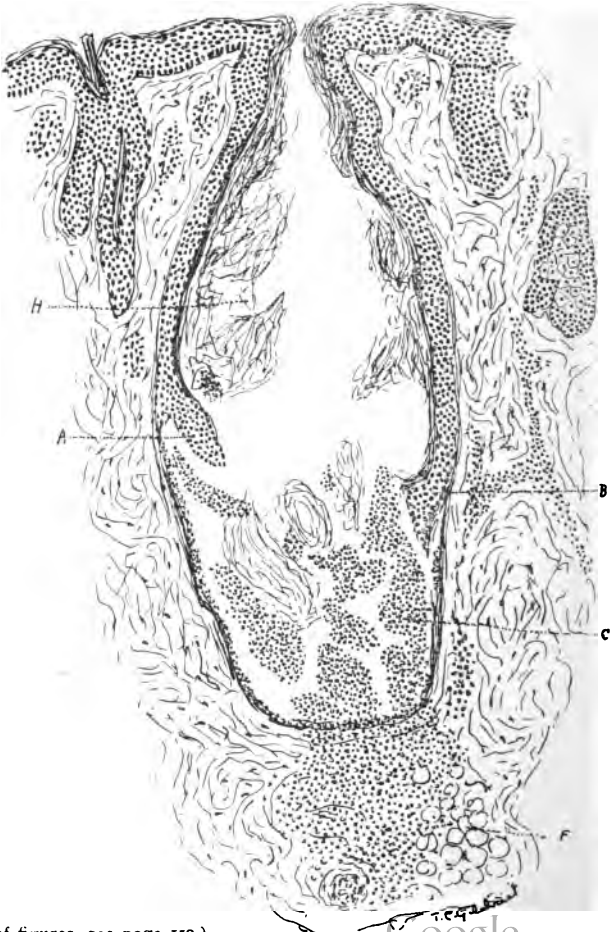


FIG. 4.



(For description of figures, see page 119.)

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for 10 hours in an autoclave at a temperature of 65 to 67 degrees C.; this killed the cocci and only the bacilli would grow. He does not describe any branching forms of the organism. Other observers on the acne question did not view the bacterial origin with favor.

Up to 1899 no observer had succeeded in obtaining the acne bacilli pure from lesions of acne vulgaris or comedones, and there was practically no proof that these bacilli were the cause of acne vulgaris.

In May, 1899, I presented a paper entitled, "A bacteriological and microscopical study of over 300 vesicular and pustular lesions of the skin *with a research upon the etiology of acne vulgaris*" before the American Dermatological Society. The results were as follows:

A special bacillus was shown to be present in all the smears from 96 pustules from 55 patients; 54 cultures out of 96 were sterile on agar, 11 gave a culture of a special bacillus on glycerine-agar, whereas 31 gave growths of a staphylococcus (epidermis albus) on slant agar.

The pure cultures of the bacillus were best obtained chiefly from acne nodules. The lesion was washed first with green soap and carbolized water and then with 95 per cent. alcohol. The nodule was then opened with a sterile lancet and the first portion of the contents squeezed out was wiped off with alcohol; the remaining portion of the contents was expressed and transplanted *en masse* on glycerine-agar.

The clump gradually increased in size on the media, forming at first a whitish soft, pultaceous, easily movable mass, which was smooth, moist, glossy and with a regular edge. The organism grew on blood serum, in glucose-agar in stabs (but without the formation of gas), in bouillon and very slightly on potato. Old cultures would gradually turn pinkish, then almost black.

The bacillus was described as a short, thick organism in the smears, but in cultures it became longer, thicker and branched. (Figs. 1 and 2.) Irregular staining was also noticed in older cultures. It does not decolorize by Gram's method. No capsule could be demonstrated. A few branching forms were found in the smears.

Successful inoculations in mice and guinea pigs were carried out. The animals died in about a week. Pure cultures of a bacillus were obtained from the different organs.

It was remarked that the results obtained seemed to justify the conclusion that the pustules and nodules of acne vulgaris were due, not to the invasion of ordinary pus organisms, but rather to the specific bacillus just described.

The name *bacillus acnes* was given to the micro-organism.

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In 1900 L. Bollack carried out a number of investigations on this disease. Many times he got only the staphylococcus albus in cultures. By using Sabouraud's method he got cultures of the acne bacilli. Inoculation results were negative. Bollack does not believe that comedones are of bacterial origin but that the acne postules are due to secondary infection of ordinary pus organisms.

In carrying our further observations on the disease I took up the following lines of procedure:

I. Confirmation of the results obtained in my previous investigation.

II. Excision of typical acne pustules and nodules in order to observe the histo-pathology more thoroughly.

III. To test whether the blood serum of patients suffering with acne vulgaris would agglutinate the *bacillus acnes* and so demonstrate the presence or absence of agglutinins produced by this organism in the blood of patients.

I. Typically marked cases of acne vulgaris, usually with nodular formations (acne indurata) present, were chosen in making these investigations. Lesions with distinct yellowish or whitish apices showing undoubted secondary infection with the ordinary pus organisms, principally the staphylococcus pyogenes albus, were not made use of. Acid glycerin-agar was again the medium used in making the cultures. All but two of the cultures were obtained from lesions on the face. Cultures were taken from 145 lesions from 31 cases and the following results were obtained:—

52 yielded pure cultures of the bacillus acnes (the micro-organism which I have already described in my previous communication).

28 were sterile.

15 showed cultures of bacillus acnes and only a few colonies (2-12) of the staphylococcus epidermis albus.

29 gave cultures of bacillus acnes and numerous colonies of staph. albus.

21 yielded only cultures of staphylococcus albus.

In girls the cultures were far more apt to be pure than in young men.

The reason that so many cultures were sterile was because some media were not properly made.

Smears from all the lesions from which cultures were taken showed after staining, according to Gram's method, the presence of varying numbers of the *bacillus acnes*.

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There were a series of nine cases (girls whose ages varied from 18-21 years) who all presented such typical examples of the chronic nodular or indurated form that I took cultures from many of the nodules. Pure cultures of the bacillus acnes were obtained from every lesion examined in one patient. She had the lesions on the face, shoulder and back and had had the disease many years. The majority of the lesions belonged to the indurated variety and there were many pitted scars scattered on the face. All the nodules were quite firm and even hard; all were attached to the overlying epidermis. The majority of them were about the size of a small pea. Some presented a purplish tinge, others were brownish red, whereas some were writish, so that one could hardly detect the lesion with the naked eye, but could easily feel it. On opening these lesions and expressing the contents with the fingers a brownish-red gelatinous substance was extruded. If the nodule was of purplish tinge and the epidermis over it appeared soft to the touch, in fact assumed a slight fluctuant feel, then the contents would be more liquid, but still be of a brownish-red color.

In all cases of acne vulgaris, whenever the acne lesions are slow in forming, the indurated lesions assume all the characteristic features which have been just described in the above case. Sometimes the induration grows quite large, up to the size of a small bean and the contents still have that liquefied brownish-red appearance. Varying stages from the thick gelatinous substance to the very liquefied contents have often been observed. Small plugs of very small whitish clumps are often noticed in the expressed contents of the nodules, and it is often from these clumps, which are probably masses of *bacilli acnes* that one obtains the pure culture of this organism.

In the series of nine cases just mentioned the following results may be mentioned:—

From Case II. 13 cultures were taken, which yielded 8 pure cultures of bacillus acnes, 1 sterile tube and 4 of bacillus acnes mixed with colonies of staphylococcus albus.

From Case III. 16 cultures were taken and 8 were sterile (owing to the media not being properly made), 6 gave pure cultures of bacillus acnes and 2 showed bacillus acnes mixed with staphylococcus albus.

From Case IV. 11 cultures were taken, which showed 6 pure cultures of bacillus acnes, 1 sterile and 2 of bacillus acnes and staph. albus.

From Case V. 11 cultures were taken, resulting in 4 pure cultures

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of bacillus acnes, 5 cultures of bacillus acnes mixed with staph. albus, 1 sterile tube and 1 pure culture of staph. albus.

From Case VI. 2 cultures yielded 2 pure cultures of bacillus acnes.

From Case VII. 3 cultures showed 2 pure cultures of bacillus acnes and one tube of bacillus acnes and staph. albus.

From Case VIII. 4 cultures gave 2 pure cultures of bacillus acnes and 2 of bacillus acnes and staph. albus.

From Case IX. the same results were obtained as in Case VIII. from 4 cultures.

Therefore, in these nine cases, 64 cultures from 64 lesions gave 32 pure cultures of bacillus acnes, 18 cultures of bacillus acnes mixed with staphylococcus albus, 11 tubes were sterile and 3 cultures gave only the staphylococcus albus. Of the total 31 cases 19 yielded pure cultures of bacillus acnes, 5 gave bacillus acnes mixed with staphylococcus albus, 6 were sterile and one patient, from which only one culture was taken, gave a pure culture of the staphylococcus epidermis albus.

From a cultural standpoint, therefore, if the results of these later investigations be added to the first series communicated in my previous paper, we have the following data:—

When only slant glycerine agar was used as a media, then pure cultures of bacillus acnes were obtained from 62 lesions, (chiefly indurated acne lesions) occurring in 29 patients.

28 cultures were sterile.

44 cultures gave growths of bacillus acnes mixed with a varying number of colonies of staphylococcus albus.

21 cultures showed only pure growths of the staphylococcus albus.

When only slant agar was used as the media then 54 cultures from 54 lesions were sterile and 31 cultures yielded pure growths of staphylococcus albus. Smears from all the 240 lesions showed the presence of bacillus acnes.

Judging from these data alone one would strongly suspect some distinct relationship between these bacilli, to which I gave the name bacillus acnes, and the disease acne vulgaris. As I have contended before, the presence of the staphylococcus epidermis albus in the cultures is either due to faulty technique or is a secondary invader into the lesion. As the result of these cultural observations one can know pretty well when a pure culture of the bacillus acnes will be obtained or when it will be contaminated by the character of the lesion and especially by the character of its contents.

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With reference to the description of the morphology and cultural characteristics of bacillus acnes which I have already described in my previous paper I have nothing further to add.

Inoculation experiments have been tried again, but with unfortunate results, as either the animal died of some epidemic disease which occurred at the time or that the autopsy was delayed too much to be of use. More attention is being given to these experiments now.

II. *Pathological Histology of Acne Vulgaris,* especially the pustular and nodular or indurated variety.

Two typical indurated acne lesions were excised from the back and shoulder of the patient from whom pure cultures were obtained from every lesion examined. Both nodules were about the size of a small pea and both were apparently situated deep in the skin, attached to the epidermis and quite firm. Acne nodules which were situated on the forehead, temple, cheek and chin were excised from six other patients. Finally the brownish-red gelatinous contents which were squeezed out of one lesion were dropped into alcohol, hardened, and sections were made which showed a structure similar to that of the excised nodule.

By means of the sections taken from these seven cases of acne vulgaris, together with sections from an excised comedo, one can follow the process of formation of the acne nodule and especially of the pathological changes which take place in the skin when due to the presence and growth of the uncontaminated bacillus acnes. A section of the comedo which was excised is shown in Fig. 3. As Unna has already pointed out, a comedo is due to a hyperkeratosis of the hair follicle. The follicle had become widely dilated and enlarged and was filled up with many layers of keratinised substance. The lining of the follicle consisted of an inner thick, horny layer, a thin granular and an outer (next to the corium) layer, corresponding to the rete of the epidermis. The sebaceous gland was pushed deeper down into the corium than normal and there was less of the glandular structure and more cells like epidermal cells; in fact it presented the appearance as if the change of the cells into glandular cells had been considerably retarded or stopped. There were some slight changes about the vessels below and around this comedo, consisting of collections of lymphoid cells, but no inflammatory reaction was noticeable.

The next stage was represented by a very small acne nodule in the center of which could be seen a small comedo; it was excised from the cheek. Sections of the nodule (Fig. 4) showed an exaggeration of

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the same process which caused the formation of the comedo, together with a distinct inflammatory reaction. This comedo was larger, deeper and broader than the simple comedo just described, but the lower portion had the appearance as if it had been ruptured. The contents of the comedo was made up of horny material and large numbers of polymorphonuclear leucocytes, together with nuclear detritus, which mass extended deep into the skin down into the fatty layer. There was no sign of any sebaceous gland; it apparently had disappeared. The greater portion of the lesion was circumscribed. By staining some sections according to Gram's method, bacilli acnes could be detected in fairly large numbers. Some inflammatory reaction was noticeable in the blood vessels in the deepest portion of the lesion and surrounding it. Numerous lymphoid cells, young connective tissue cells and some plasma cells were collected round the central inflammatory mass.

The next or third stage was represented by a fair sized acne nodule (small pea sized), which was also excised from the face. The nodule was quite firm and of a brownish-red or slight purplish color; it was raised above the level of the skin.

The sections showed still further downgrowth of the follicle, which extended three times as deep (obliquely, so that the deepest portion was almost level with the overlying epidermis) into the corium as the simple comedo described above (Fig. 5). The broadest portion of the follicle was four times broader than the simple comedo. A noticeable feature was also the marked hypertrophy of the wall of the follicle, especially in the lower two-thirds. In the simple comedo the lateral walls were made up of about four or five layers of flattened epidermal cells, with an inner distinct granular layer, whereas in the striking condition of this third stage, there are as many as fifteen layers of comparatively large, soft epidermal cells which show distinct prickles. The outer contour (next the corium) of this hypertrophied follicle is very irregular in the lower half, consisting in places of blunt projections into the corium, and the outer layer of cells are usually columnar. Many polymorphonuclear cells are scattered throughout this epidermis. The upper third of this follicle presents the characters of the comedo. The contents of this enlarged follicle is usually lost in making section, but it shows in the portions left, a mass of keratinised layers, numerous polymorphonuclear leucocytes, mononuclear cells, and nuclear detritus.

The whole corium surrounding the lower two-thirds of this hypertrophied follicle presents striking pathologic conditions. The lesion

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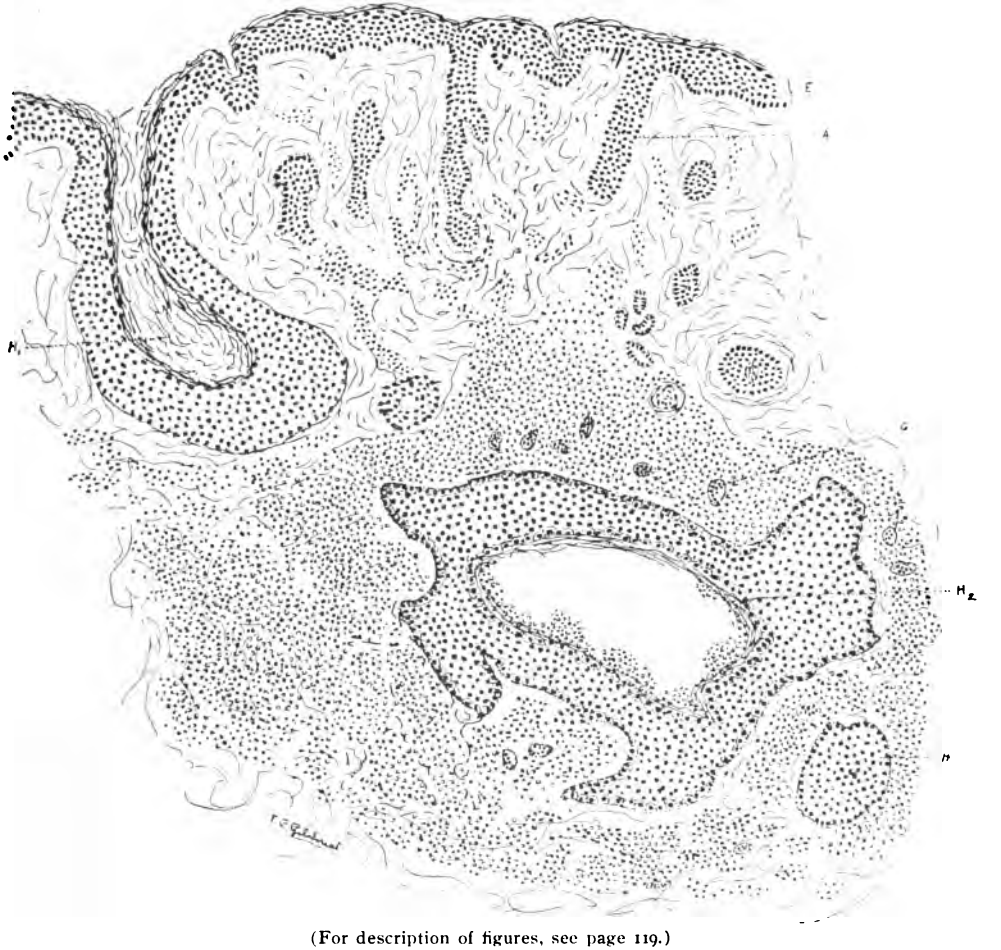
FIG. 5.



(For description of figures, see page 119.)

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is made up of very numerous polymorphonuclear leucocytes, which preponderate so much in places that they present the appearance of a miliary abscess; there are also large numbers of plasma cells and numerous variously sized giant cells. In the region which is between the follicle and the overlying epidermis (the follicle extends obliquely in its deeper portions) large numbers of cells, apparently plasma cells, have undergone pigmentary degeneration. Similar degeneration could be noticed in cells scattered throughout the deeper portion of the lesion, i. e., underneath the follicle. The pigmentary deposits are quite noticeable in thick sections. Pigment granules and masses are also found between the cells. This pigmentation would explain the color of these acne nodules.

The pathologic process did not extend round the upper fourth of the follicle, but throughout the corium surrounding the hypertrophied follicle laterally and beneath, so that it distinctly invaded the subcutaneous tissue. Numerous dilated blood vessels and lymphatics were also noted throughout the lesion. There was no attempt at any formation of tubercles, although many giant cells were present. Many noticeable phagocytes were seen, containing masses of nuclear detritus. On staining sections according to Gram's method, numerous bacilli were seen in masses within the follicle and a few small clumps were found here and there throughout the lesion in the corium. The epidermis of the skin and neighboring structures were unaltered and were practically normal. The blood vessels of the corium in the neighborhood of the pathogenic processes were also dilated and showed chronic changes.

Sections from another excised nodule (IV.) showed more acute inflammatory reaction; the follicle was not nearly so large as in the nodule just described. The large numbers of mononuclear cells seemed to assume the character more of lymphocytes than plasma cells; the giant cells in the lesion beneath the follicle were well marked and fairly numerous; polymorphonuclear leucocytes were more numerous, but pigment cells only few in number. Below the follicle was situated a very large mass of bacilli (bacillus acnes), which were easily demonstrated by Gram's method of staining. The neighboring sweat glands and duct (lowest portion) were surrounded by masses of polymorphonuclear leucocytes. Blood vessels in the lesion were numerous and dilated. There was marked hyperkeratosis of the follicle and numerous polymorphonuclear leucocytes were scattered through it.

In sections from another nodule (V.) the lesion presented features

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similar to the last two nodules just described with the exception that the deeper portion of the follicle had apparently ruptured, the contents being continuous with the lesion in the corium, and thus formed almost circumscribed miliary abscesses. Still another acne nodule (VI.), which was a very firm small pea sized non-inflammatory lesion, situated on the back, near the upper portion of the scapula, was excised. It was not easily recognized, but could easily be felt. The skin over it was apparently quite normal. Sections showed that the greater portion of the pathologic process was situated deep in the corium and in the subcutaneous tissue (Fig. 6). The upper portion of the follicle and corium was but little affected. The giant cells were remarkable for their number and size and being massed together, otherwise plasma cells, connective tissue cells and polymorphonuclear leucocytes formed the major portion of the lesion. Very few bacilli (bacillus acnes) were found throughout the lesion. No diplococci were found. Pure cultures of bacillus acnes were always obtained from lesions of this case.

The portion of contents which was expressed from a similar nodule on the face after being incised was hardened in alcohol and sections made. It showed similar structure to the deeper lesion situated in the skin, viz., giant cells, plasma cells, etc., etc. Clumps of bacilli (bacillus acnes) were seen after appropriate staining. Finally a larger nodule (VII.), which was excised from this same case, in the region of the shoulder, showed more inflammatory changes. (Fig. 7.) The nodule was clinically slightly inflamed and was painful. The pathologic process had extended very markedly downwards deep into the corium and subcutaneous tissue. The follicle was not widely dilated and did not present very marked hyperkeratosis, so that there was no specially noticeable comedo surmounting the nodule. In the lower portion of the follicle it contained numerous polymorphonuclear leucocytes, which were also present in large numbers outside. The greater portion of the lesion was beneath the follicle and this formed a striking picture, consisting of numerous variously sized, quite noticeable giant cells, large numbers of polymorphonuclear leucocytes, which in two places were massed together so as to form what appeared to be two contiguous miliary abscesses. Many connective tissue cells were also present and numerous phagocytes containing nuclear detritus. Plasma cells were not nearly so numerous in this nodule as were found in other nodules. Bacilli acnes could be detected here and there in small clumps throughout the lesion, but they were not at all numerous. In the last two nodules bacilli were found in a few giant cells.

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FIG. 6.

FIG. 7.

(For description of figures, see page 119.)

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III. In order to find out whether the blood serum of patients suffering from acne vulgaris caused the bacillus acnes to agglutinate, seven specimens of blood were obtained from the lobe of the ear from six cases of this disease. The blood was drawn up into a glass bulb and after allowing it to stand for some hours, so as to coagulate thoroughly, the serum was withdrawn by means of a pipette. One drop of this serum was then added to certain definite quantities of sterile Dunham's solution, so as to make dilutions of 1-5, 1-15, 1-25, 1-30 and 1-50. A very small quantity on a platinum point of a one week old pure culture of bacillus acnes was thoroughly mixed with a quantity of Dunham's solution in a test tube so as to make a "suspension." One platinum loop full of the suspension was placed on a cover slip and one loop of the diluted serum was added so that specimens were made of dilutions 1-10, 1-30, 1-50, 1-60, and 1-100. These cover slips were placed on hollow glass slides and with the 1-6 objective (Leitz) one could then see the fairly rapidly moving colorless bacilli. These specimens were observed at various times off and on for 20 hours. After 15 hours definite clumping or agglutination was noticed in all the specimens in all the dilutions and after 20 hours the clumping was still more marked. It was noticed in general that the weaker the dilutions, especially in the 1-100, the more marked was the clumping of the bacilli.

Specimens of blood serum from 5 normal patients were tested in the same way as a control and the bacilli acnes showed a slight tendency to agglutination in the stronger dilutions, but in the dilution of 1-100 the agglutination was entirely absent.

SUMMARY.

The following results have been obtained in an investigation into the etiology of acne vulgaris (the data given include the results of my previous observations):

1. Definite bacilli, which I have already named bacillus acnes, were present in all smears taken from 240 typical acne lesions from 86 patients.

2. Pure cultures of bacillus acnes were obtained from 62 lesions (chiefly acne nodules) from 29 patients, 82 cultures being sterile (about 70 of these were sterile because the proper media was not used) and the remainder showed either a growth of bacillus acnes mixed with staphylococcus pyogenes or epidermis albus or the latter organism was in pure culture.

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3. Sections of an excised comedo, of an early acne papule, of an acne pustule and of five acne nodules from six patients demonstrated the stages of the disease. The sections from the acne nodules showed quite profound changes extending deep into the corium surrounding in some nodules a magnified and markedly hypertrophied follicle. The lesion was made up of masses of cells, many giant cells, plasma cells, which were very numerous in some nodules, but not in others, their place being taken by lymphoid cells or connective tissue cells. Very many polymorphonuclear cells were also present and were massed in some sections so as to form miliary abscesses; numerous phagocytes were seen and also many pigment cells, especially in one nodule where they were in large numbers. The blood vessels were numerous and dilated. In one section a large group of bacilli acnes were situated deep in the corium beneath the follicle, but in most of the section only a few small clumps or scattered bacilli were found. Some of the giant cells contained bacilli.

4. Bacilli acnes have been shown to be pathogenic in mice and guinea pigs.

5. Bacillus acnes is present as a short thick bacillus in the smears, but in culture it often becomes much longer and thicker; and in old cultures assumes distinct branching forms. It grows when planted *en masse* on acid glycerine agar and forms a pultaceous easily movable mass.

6. By the clumping of bacillus acnes by the sera of patients affected with acne vulgaris it is to be inferred that a specific toxic body derived from the presence of the bacilli in the tissues is absorbed by the blood, resulting in the production of a specific agglutinin.

What deductions can be made from all these results?

It seems to be now definitely proved that this micro-organism, bacillus acnes, is the primary cause of acne vulgaris. The organism is always present in the lesions; pure cultures have been obtained direct from the lesions many times (62), it is pathogenic in animals and it has been demonstrated that the blood serum of acne patients agglutinates these bacilli.

It has occurred to me whether we are not taking a wrong view in considering the anemia, constipation, headache, coated tongue, etc., as always predisposing causes of acne vulgaris, whereas, these symptoms may be the result of the continued absorption of toxins from the enormous numbers of bacilli present in all the lesions. As far as

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the principle is concerned the disease can be compared with erysipelas. In erysipelas the streptococcus pyogenes invades the skin, an acute local inflammatory process is set up and the toxin is absorbed rapidly into the blood which causes the constitutional symptoms, viz.: Fever, headache, coated tongue, constipation, loss of appetite, etc. We do not say that these symptoms are the predisposing causes of erysipelas, but that they are the result of the disease. So from analogy, although we are dealing with a much more chronic disease in acne vulgaris, it is not too much to infer that the accompanying symptoms may result from the continued absorption of toxin produced by the innumerable number of bacilli present in the acne lesions.

I do not deny that there are still predisposing causes such as age, diet, etc.; yet we know that patients who carry out all that is advised as to diet, regular bowels, appropriate internal and external treatment sometimes do not get cured for months or even years. The disease will persist and it often relapses. Acne vulgaris in its severer forms is a profound disease. I do not mean that it is a dangerous disease, but it is a disease which affects the whole system of young adults. Acne vulgaris must, therefore, be treated with respect and it must be handled with care and attention to all details therapeutically.

Previous to my first communication bacillus acnes had not been obtained in pure culture from acne lesions, neither had it been proved to be pathogenic in animals nor has the agglutination test been done before.

While these later investigations were being concluded, Sabouraud published (1902) an extended monograph on "Seborrhée, Acnes, Calvitie." As far as the acne question is concerned he repeats his former statements. He improves on his previous technique and is now able to obtain a pure culture of his microbacillus direct from the sebum plug by placing it on a sterile glass slide and then planting on his special media. He does not describe any branching forms in the culture of his organism. I have seen a pure culture of his microbacillus, and to the naked eye it looks like my bacillus acnes, but it certainly is curious that he has not observed any branching forms. Sabouraud did not obtain a pure culture direct from the acne lesions, either pustules or nodules. In fact, he still asserts that these lesions are due to secondary infection by ordinary staphylococci (albus). He suspects that some acne lesions are caused by the microbacilli, but he could never prove it and he never found the bacilli to be a pus producer.

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Sabouraud believes that the comedo is caused by his microbacillus which he says is the same as Unna's acne bacillus. Sabouraud also fully believes that his organism is the cause of seborrhœa and of the alopecia following this disease.

He describes the pathology of acne lesions as well as the comedo and acne indurata he explains as being due to the invasion into the deeper structures of the staphylococcus albus. He also asserts that acne necrotica is due to the invasion of staphylococci.

Sabouraud believes that the alopecia following seborrhœa is caused by the toxins of his microbacillus. He apparently demonstrates this by inoculating rabbits, a sheep and a horse with a quantity of the toxin and cause the hair to fall out in fairly large areas.

Sabouraud makes no mention of the writer's investigations on acne vulgaris, published two years previous to his publication.

In comparing Sabouraud's results with my own, he asserts that his bacillus is the cause of seborrhœa, comedones and alopecia (seborrhœic), and that acne lesions are due to secondary infection by the staphylococcus albus, whereas I have demonstrated that the bacillus acnes is the cause of acne vulgaris by its constant presence in acne lesions (240), and by the obtaining of pure cultures of the bacilli from 62 indurated acne lesions, by its pathogenicity in animals, by its presence deep in the acne lesions (indurate), and lastly by the power of the blood serum of acne patients to agglutinate the bacillus acnes in dilutions of 1-100.

I am deeply indebted to Dr. Norman MacL. Harris, of the Johns Hopkins University, for his valuable aid and suggestions, especially in the agglutination tests of the blood serum.

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DESCRIPTION OF PLATES.—Dr. Gilchrist's Article.

FIG. 1. Bacillus acnes as seen in a stained smear from the contents of an acne nodule. (Drawn with the aid of a camera lucida. Oil immersion lens—ocular No. 4.)

FIG. 2. Branching forms of bacillus acnes as seen in an old culture (pure) on glycerine-agar. (Drawn with the aid of a camera lucida. Oil immersion lens—ocular No. 4.)

FIG. 3. Section of a comedo. The hair follicle (H) is widely distended. The walls consist of flattened epithelial cells. The substance which makes up the comedo is formed by a hyperkeratosis of the inner layer of the hair follicle. S is the sebaceous gland.

FIG. 4. Section of a recent inflamed acne papule showing the distended hair follicle (H), the lower wall of which has ruptured. A and B indicate the points of rupture. The contents of the lower portion of the lesion consist of masses of polynuclear leucocytes and nuclear detritus (C), etc., practically constituting a minute abscess which has invaded the fatty layer (F) of the skin.

FIG. 5. Section of a dull reddish chronic, slightly inflamed acne nodule which was very firm, raised and excised from the face. The hair follicle (H) is remarkably hypertrophied and is cut obliquely in the section so that it is divided into two portions H_1 and H_2. In other sections of the same nodule the joining of the two portions could be traced. The walls of the deeper portion of the follicle are markedly hypertrophied. Large masses of cells, polynuclear leucocytes, plasma cells, lymphoid cells, connective tissue cells and giant cells (G), surround the hypertrophied follicle.

FIG. 6. Section of a very firm, small, chronic, non-inflammatory acne nodule which had apparently not involved the epidermis and was not inflamed. The hair follicle (H) was not much hypertrophied and the nodule appeared to consist mostly of a mass of cells, plasma cells, lymphoid cells, connective tissue cells, polynuclear leucocytes, and large numbers of giant cells (G), situated about and beneath the hair follicle. Pure cultures of bacillus acnes were always obtained from similar nodules from this case.

FIG. 7. Section of a firm, slightly inflamed pea-sized acne nodule. This section does not show the continuation of hypertrophied hair follicle from the epidermis downward, but only portions (H) are seen deep in the tissue. The nodule consists of quite deeply situated masses of cells similar to those seen in Fig. 6. Large numbers of strikingly noticeable giant cells (G) are present and the central portions of the masses present features of abscess formation (C).

Figs. 3, 4, 5, 6 and 7 have been drawn on the same relative scale.

(B) SYMPTOMS AND TREATMENT.—BY DR. GEORGE HENRY FOX OF NEW YORK

Acne, according to the strict definition of the term, is an inflammatory affection involving the sebaceous glands. But it is so commonly associated with either a hypersecretion or an obstructed condition of these glands, that it is impossible to present a clinical picture of acne without taking into consideration the comedo and the seborrhœa oleosa, which are usually described in text-books as distinct affections.

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The various conditions or functional disorders of the glandular apparatus which are associated in nearly every case of acne, depend primarily upon a sluggishness or lack of tone in the affected skin. They are usually aggravated by an imperfect digestion, a poor circulation, or by any cause which depresses the vital activity of either mind or body.

These predisposing causes of acne are innate and often hereditary. In many cases they simply cause what is commonly known as a poor complexion or an unhealthy skin. The line of demarcation between this condition and a mild acne is not always readily drawn, but whatever diagnosis may be made in a given case, there are certain therapeutic measures, both general and local, which are equally adapted to the predisposing condition and to the well-developed acne.

To occupy the attention of this audience with any detailed description of the lesions or symptoms of acne would be both absurd and uncalled for, but a word or two as to clinical forms may not be amiss. The terms acne papulosa, acne pustulosa and acne indurata, found in nearly every text-book, serve no useful purpose, and tend to mislead the student. There is no papular or pustular type of acne as there is of syphilis. The acne eruption is almost invariably a combination of papules and pustules, while in the early syphilides there is a notable predominance of either the papule or the pustule, even when both lesions happen to be present in a given case.

The classical acne indurata, on the other hand, does indicate a distinct type of the disease, although the name is a misnomer, and might place to acne nodosa or acne phlegmonosa. The nodular lesions of this type are rarely if ever indurated or sclerosed, even when small, and as they increase in size and tend to suppurate their softness is a marked clinical feature.

The term acne rosacea is one which has long been a dermatological stumbling block. The common disease which affects the middle third of the face and is characterized by a new growth of connective tissue and blood vessels is certainly not a form of acne. It is clinically and pathologically distinct and deserves the distinct name which many now apply to it, viz., rosacea. But there is a form of acne which often affects the nose in the years of adolescence and even later, which is characterized by a notable degree of cutaneous congestion, and which bears a strong resemblance to rosacea. This might with justice be termed acne rosacea, but to avoid further confusion, I would sug-

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gest the abolition of this term and the substitution of acne erythematosa.

The diseases known as acne cachecticorum, acne varioliformis and keloidal acne are quite distinct from acne vulgaris, and it would avoid much confusion if our committee on nomenclature could affect a change in their names.

From a therapeutic standpoint, acne may be conveniently divided according to the plan upon which surgeons have classified leg ulcers, viz., into an irritable and an indolent type. In the former, the skin is often fine and delicate. An urticarial element, dependent upon a general neurotic state, is usually present and local treatment is rarely of much service. In the latter, or the indolent variety of acne, vigorous local measures are indicated and often produce a most brilliant result.

In the therapeutics of acne it is a common and serious mistake to regard the disease as a purely local one, but too often the general treatment of the patient is overlooked or made subsidiary to the application of the conventional ointment or lotion.

One might as well claim that a sad or a happy expression of the face is due to a condition of the skin and muscles as to assert that a bad complexion or the eruption in acne is an affair pertaining solely to the sebaceous glands. A sluggish circulation and a constantly recurring irritation of the gastro-intestinal tract is frequently as essential a part of acne as the follicular congestion and the presence of microbes in the pustules. Even a functional disturbance of the liver may have as much to do with a case of acne as it has with a case of hæmorrhoids.

All active measures, either hygienic or medicinal, which will improve the functional activity of the various organs, and raise the tone of the patient's mind and body to its normal pitch, whether it be a short vacation or a dose of physic, will strike at the tap-root of acne, and if it does not suffice unaided to cure the disease, as sometimes happens, it will certainly tend to increase the beneficial effect of local applications.

Of the medical treatment of acne, little need be said. A dose of salts or castor oil may often benefit the patient, but no one would be apt to speak of these as remedies for acne. In like manner, calx sulphurata, ergot, glycerine, arsenic, and other drugs may, under certain conditions, prove of some service to a patient with acne, but the direct effect which they produce upon an acne eruption has been

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greatly overrated, and their routine use by many physicians on the strength of text-book commendation is greatly to be regretted.

In the local treatment of acne, judging from the text-books, little advancement has been made in recent years. The lotions and ointments of a generation or two ago are still awarded an honorable mention, if not recommended *magna cum laude,* and a few new formulæ of the same character are usually added.

And what are these local applications worth in the cure of acne? They may oil and soften a harsh, dry skin; they may soothe in a slight degree a highly inflamed skin, and they may cover and conceal the irregularities and blotches of an ugly skin; but as therapeutic agents in the cure of acne, the lotions and creams and balms of a lenitive or slightly stimulating character are fakes in their conception and failures in their action. They accomplish no result which can not be more speedily attained in other ways, and in the face of dermatological tradition, I have no hesitancy in declaring them all to be practically of no value.

The best that can be said of these mild applications is that they do no harm. The inunction of oil in which the Romans indulged after a bath did no harm to a sound and healthy skin, but I would like to have some one, either Roman or American, tell me what earthly good it did.

When we consider the local applications which are highly stimulating to the cutaneous circulation, and especially those which produce a marked desquamation of the epidermis, a different judgment of their merits must be offered. The use of soap in acne when applied simply as an epidermicide, and not combined with friction, has long been in use, although its value has never perhaps been fully appreciated. The intense swelling of the skin produced by soap is apt to occasion considerable pain, and except in cases where many deep-seated lesions are present, epidermicide applications having a more superficial action may be substituted. Among these are bichloride of mercury, salicyclic acid, and resorcin. The latter, in an aqueous solution of a strength varying from 20 to 40 per cent., has been used with excellent results in many cases at the Vanderbilt clinic, where little trouble on the part of the physician and a speedy result were desirable.

In the local treatment of acne, the best results are to be attained, in my opinion, by measures which may be termed dynamic rather than

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chemical. These include massage, friction, and the use of instruments intended to empty the distended and obstructed follicles.

It is now many years since I abandoned in my private practice the routine use of ointments and lotions in the treatment of acne, and the substitution of a mechanical plan of treatment, although it has involved more time and trouble than the writing of prescriptions, has been far more satisfactory to me, and I am sure has proved of much greater benefit to my patients.

I hesitate to use the term "facial massage" in discussing the treatment of acne, because this term has been brought into more or less disrepute by various advertising "complexion specialists" who lay great stress upon dipping the tips of the fingers in cold cream or some alleged "skin-food" and gently manipulating the face according to some peculiar, arbitrary and unnecessary rule. By massage of the face I mean vigorous and frequent pinching of the skin between the thumb and fingers of one or both hands. It matters not in what direction the force is applied. No injury can be done to the skin so long as the patient is conscious and able to protest against a too violent use of the fingers. A knowledge of the direction of the underlying muscles, which is claimed to be of the utmost importance by the quasi-scientific "complexion specialist" is no more requisite than is a knowledge of the cellular texture of wood on the part of the cook who scours a kitchen table. Such massage or pinching of the skin for a minute or two will often give to a dry, harsh cheek a soft, smooth and oily feeling. In a case of acne it quickens the cutaneous circulation and hastens the absorption of nodules; it destroys all pustular lesions, whether superficial or deep seated; it tends to empty distended glands, obstructed ducts, and gives life and tone to a skin whose inactivity is the prime cause of the disease in question.

It is advisable for the physician to perform this kind of massage once or twice at the outset and then to have the patient repeat it every day as vigorously as possible. Instead of using cold cream or any other emollient for the purpose of softening the skin, it is much better to dust the face with powdered pumice stone, so that the fingers will not slip and thus defeat the object of manipulation.

Of the various instruments used in the treatment of acne, a few are of only theoretical value, while one or two seem to me to be indispensable. In late years there has been, I think, a tendency to the more frequent use of instrumental measures in restoring the skin to

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its normal condition, and less resort to the old-time lotions, a change which is certainly to be commended.

The electrolytic needle has been recommended in the treatment of acne, but there appears to be no occasion for its use, as it accomplishes no result which cannot be more readily attained by other means.

The acne lancet, or triangular knife, with a shoulder to regulate the depths of the incision, is of great service in cases where dermic abscesses or deep-seated nodules are present. But its use in evacuating small superficial pustules is quite unnecessary and it frequently brings upon the physician the unjust opprobrium of causing scars which result naturally from the destruction of tissue by the acne pustules.

The various instruments devised for the expression of comedos and the emptying of distended follicles serve a useful purpose and may be advantageously employed in most cases. Some of those in use appear to me to be clumsy and ill adapted to the purpose for which they are intended, but experience in the use of any instrument will accomplish results which, unattained by others, might lead to an unfair condemnation of the instrument. At the present time the best comedo extractor appears to be largely a matter of taste. With the advent of stem-winding watches the old-time watch key gave place to a silver tube of varying size, which, I believe, I was the first to recommend. Experience has shown that the silver tube is far inferior to an instrument which presses only upon one side of the follicle, and for many years I have used a steel claw like that on the end of a tack hammer, or a small curette with a semi-circular piece cut out of the end. This presses on opposite sides of a comedo and effects its extraction much more readily than an instrument with a rounded aperture.

The best instrument, however, for general use in the local treatment of acne is the curette. With this the superficial pustules can be destroyed far more readily than by means of a lancet, and the comedos either pressed out or their projecting heads scraped off so that daily massage will cause their speedy disappearance. The vigorous use of this instrument often presses out of the distended follicles a considerable amount of sebaceous matter. It quickens the cutaneous circulation and thereby promotes the absorption of the plastic deposit in indolent nodules. In most cases its frequent and persistent use tends to increase the functional activity of the glands, to stimulate the inactive skin, and to cause it to assume a comparatively normal appearance.

Almost any form of curette may be used for this purpose, from a

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sharp spoon to a dull spatula, but the instrument which I have used for many years with the greatest satisfaction is a circular curette about the shape and size of a finger ring. After scraping the forehead and cheeks with this, it is my custom to bathe the face with the same antiseptic solution which I use to cleanse the instrument (usually borolyptol). But I must confess that I do this merely from a conventional deference to the germ theory, being fully convinced, after years of experience, that the excellent result which follows this method of treatment is due solely to the mechanical action of the instrument, and that no better result can be obtained by any attempt to disinfect the follicles.

Many lengthy chapters and journal articles have been written on the therapeutics of acne. If I were asked to give the practical treatment of this disease in the fewest possible words, I would simply recommend a strict diet, cold baths, systematic exercise, and the frequent use of the curette.

DISCUSSION.

DR. HOWE, of Boston.—I do not think I have anything to add to what Dr. Fox has said. I agree with him thoroughly. When I first began to practice dermatology, I thought that much benefit could be derived from the use of lotions in the various forms of acne, but as years have gone by I have come more and more to the conclusion that the surgical treatment of acne, as we might call it, is the treatment *par excellence.*

DR. W. D. MONTGOMERY.—I look upon acne as an expression of the *status seborrhœicus*—the expression of a constitutional disturbance. I think the ingestion of an undue quantity of fermentable food plays an important rôle in the etiology of the *status seborrhœicus.* I have habitually advised the dilution of the food in these cases, the diluent to be used being green vegetables, making a good deal of bulk with comparatively little nutrition. I think the dilution of the food by green vegetables is very necessary, especially with sedentary people, for the maintenance of the general health, and incidentally for the cure of the *status seborrhœicus.* The habitual use of bread-stuffs, meat, potatoes, and sugar, and these alone, with few green vegetables, is directly favorable to the development of the *status seborrhœicus.* I look upon the ingestion of olive oil as well as green vegetables as being of very great benefit in the correction of this form of mal-nutrition.

As far as local treatment is concerned, I do get benefit from topical remedies: I am sure they have a beneficial effect on acne lesions; the sulphur ointments and lotions at any rate are beneficial.

DR. ROBINSON, of New York.—I have not prepared a paper on this subject for general discussion, but my remarks will be brought to bear directly on the views advanced by Dr. Fox, with whom I disagree on several points.

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I do not regard "acne vulgaris" as a constitutional disease, and the lesions as merely a local manifestation of the general condition of the whole system; or as a necessary concomitant or consequence of a particular period in life associated with certain development processes, such as the period of puberty, or with abnormal physiological action during this period from abuse of certain organs, masturbation, for instance; or as an incurable affection until the period of puberty is passed; or as specially depending upon functional or structural diseases of certain organs, such as the uterus, stomach, liver, etc.; or the result of an attempt, on the part of the organism to remove supposed deleterious substances from the body through the agency of the sebaceous glands, and therefore a process not to be interfered with, but I hold it to be a purely local disease, depending upon local anatomical conditions for the predisposing causes, and depending upon a microbe to be found at the seat of the lesion for the direct exciting cause. That in the treatment, the local condition demands our principal attention. I also believe that, except in a limited number of cases, the condition of the body as a whole, or of some internal organ plays only a subsidiary or accessory part, and does not demand our first consideration.

I will limit the term *"acne vulgaris"* to the suppurative lesions of the sebaceous glands occurring upon the face and shoulders of *young* persons particularly, and associated with a parakeratosis of the regions affected, although I believe the lesions of *"acne iodata," bromata, acne piciata, etc.*, depend upon changes in the anatomy of the excretory duct area of the sebaceous glands for the predisposing factor, and upon the pus organism of "acne vulgaris" for the exciting factor.

In almost every case of "acne vulgaris" there is a local hyperkeratosis, an abnormal thickening of the corneous layer with a consequent partial plugging of the excretory duct orifice of the sebaceous gland. This keratosis extends also into the duct and can make the comedo plug, composed of epidermic cells and sebum, and often one or more lanugo hairs coiled up in the duct or within the follicular portion. This hyperkeratosis is the usual cause of the comedo, a very important condition in the majority of the cases of acne, as the retained sebum is the habitat of the microbes causing the inflammation.

I believe, in opposition to some writers, that there are other causes also, for this comedo formation; causes interfering with the normal propulsion of the sebaceous material to the free surface, such as atony of the follicle; a disordered function of the sebaceous glands, forming a sebum of greater consistency than normal; an incomplete fatty transformation of the epithelial cells of the glands; this, with loss of tonicity, causes plug formation. Retained and curled up lanugo hairs probably also interfere with the escape of the sebum; evaporation and absorption of the liquid elements causes hardening of the mass; the continuous formation of sebum causes dilation of the follicle, and the comedo condition exists.

In my opinion, the inflammation is always caused by the staphylococcus pyogenes albus or aureus, especially the former. Other organisms have been described as the cause. Whatever rôle they may play in the causation of the keratosis, I do not know; but I believe that none other than the staphylococcus causes the suppurative process. Now the question arises, What other agents might cause folliculitis? Decomposing sebaceous matter? A chemical agent

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acting from without the body? Some virus or poison formed or taken within the body and eliminated by the sebaceous glands, and acting as an injuring agent? Perhaps some of these things may cause some of the nonsuppurative lesions present. This possibility cannot be denied until we know all about the causes of acne iodata, etc.

If the poison were generated in the system as, for instance, in the digestive tract, the disease would probably be more frequent in adult or late periods of life, which is not the case.

Admitting that 'acne vulgaris" is an infectious disease; that the organisms causing the inflammation are widespread; that it occurs at a certain period of life; that all individuals attacked do not suffer in an equal degree, it follows that the predisposing factors are very important from a therapeutic standpoint.

I recognize the importance of the comedo plug as furnishing a habitat for the microbes. I think that this plug can also form without a hyperkeratosis; that an acne lesion can arise without a comedo condition; that a seborrhœa oleosa is frequently present making it easy for organisms to locate upon the skin, as, for instance, in a city atmosphere, a greasy skin is always a dirty skin.

Recognizing all this, our task is to consider the causes of the hyperkeratosis; of the seborrhœa oleosa; of the imperfect tonicity of the gland structure; of the abnormal physiological action of the glands, giving a changed sebaceous material, etc., if the patient is to be treated upon a broad, intelligent, and correct basis.

Time will not permit me to discuss this important part of our subject to any further extent, so I will pass on to the treatment of existing lesions. If comedones are in evidence, they should be removed by curettage if the papular form of acne is present and the follicular keratosis condition a marked feature.

If there is a more general hyperkeratosis I prefer soap and warm water; the strength of the soap depending upon the action required. I rarely use soft soap unless the seborrhœa oleosa condition is also marked, and still more rarely Hebra's Spirit. Saponis Kalinus. A glycerine soap should not be used, as glycerine has a tendency to decompose sebaceous matter into fatty acids and glycerine, and thus injure the tissues. If the sebaceous material is related to palmatine and stearine, cold water should not be used as it might harden the material within the follicles, interfere with its expulsion, and favor the invasion of microbes.

After washing, all the soap should be removed by water, as any free alkali remaining would favor separation of sebum into glycerine and fatty acids. The use of acetic acid with water or alcohol would suffice to neutralize any alkali remaining, and, at the same time, aid in the removal of "black heads," and in the general disinfection of the skin. I always advise the use of alcohol in a non-irritating form after washing the skin, for its antiparasitic and antiseptic effect.

Steaming the face is sometimes of decided benefit before using soap and hot water. Massage should follow the washing.

The above procedure (curetting, washing and massage) removes fat, empties the follicle orifices more or less, and lessens the keratosis. Some skins are

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injured by any soap stronger than castile or a superfatted soap. Reducing agents, such as resorcin, should be used if there is present a seborrhœa oleosa, or a marked hyperæmia, and salicylic acid for its keratolytic effect, if the keratosis is marked; the object being to prevent comedo formation and subsequent infection by pathogenic organisms.

When the lesions are markedly inflammatory in character, sulphur and beta-naphthol are indicated in addition, and the strength employed should depend upon the character of the lesions, and upon the vulnerability of the skin, the cutaneous tissues of some persons being injured much easier than those of others.

If the keratosis is marked a strong preparation of sulphur can be used for a few days, to cause hyperæmia and consequent increased desquamation of the cuticle; afterward a milder ointment may be used.

A clear idea of the object desired is necessary for the judicious use of the drug. With that knowledge, sulphur is undoubtedly our most valuable single agent in the treatment of most cases of acne. The following formulæ offer sufficient variation of combinations for individual cases:

(a) Sulph. precip., 1½ dr.; Etheris, 6 dr.; Alcohol, 3½ oz.
(b) Potass. sulphuret, Zinci sulph., aa 1 dr.; Aqua rosæ, 4 oz.
(c) Sulph. precip., 1 to 2 scruples; Vaseline..... 1 oz.
(d) Sulph. precip., 2 scruples; Spir. camph., ½ dr.; Liq. calcis ..... 4 oz.
(e) Sulph. precip., 2 dr.; Etheris, 3 dr.; Tinct. Camph., ½ oz.; Bay rum..... 3 oz.

The last preparation has given much satisfaction when the lesions were markedly papular and the inflammation mild.

By the above-named measures the keratosis condition is lessened and the comedo formation hindered. At the same time these agents are more or less anti-parasitic in their action.

If the acne depends more upon retained sebum and its invasion by microbes than upon a keratosis with comedo formation, a bi-chloride, or ammoniated chloride of mercury is probably better than sulphur and can be used dissolved in alcohol, or alcohol and water, or mixed with vaseline. If hyperæmia is marked, an astringent, such as sulphate of zinc, can be added to the bichloride.

If the keratosis depends upon any disturbance of the circulation in the part, in consequence of some internal disorder, or general condition, as chlorosis, etc., it must have appropriate treatment. If it depends upon a want of tonicity in the factors that aid in the normal removal of the sebaceous matter from the gland, local measures, such as massage, are necessary to tone up these factors and prevent accumulation of sebum. This local treatment is given in addition to appropriate general treatment for abnormal systemic conditions.

Although the life duration of a lesion is short it is necessary to treat the lesion in order to limit the inflammatory process, and prevent marked scarring; also to hinder infection of neighboring glands.

The treatment is the same as that given for any suppurative lesion, namely: drainage, and disinfection. When the microbes cause a marked suppurative

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perifolliculitis, the lesion being pea-sized or larger, and of long life duration and small abscess formation followed by marked scarring, tonics, especially cod-liver oil, and proper food, etc., must be prescribed, in addition to the surgical measures.

The prophylactic treatment consists in attention to the general health, insuring good nutrition and normal gland function.

The local prophylactic treatment consists in attention to all the factors I have mentioned as predisposing; the use of a proper soap, massage, friction, disinfectants, etc.

Many ladies have the mistaken idea that soap injures the skin, and so, in not using it, have a thickened corneous layer and plugged sebaceous duct orifices. A good soap, used as I have suggested, is always advisable.

Were this paper not already too long, I would dilate a little on the benefits of the X-rays in some cases, such, for instance, in which the keratosis condition is not a prominent feature.

DR. SHERWELL.—I know Dr. Fox appreciates that I am interested, as we all are, in the treatment of acne vulgaris. Speaking from the standpoint of a clinician and empiric, and as one who has had considerable experience with this affection, I can say that I have been extremely fortunate in my results. The method of treatment I have usually employed has resulted in a fair amount of success, and my patients get well in a comparatively short time. Occurring, as acne does, particularly in the youth of both sexes, more especially the female, I have long been inclined to attribute it largely to troubles connected with the organs below the brim of the pelvis, such as congestive conditions of the uterus, bladder, rectum and urethra. As to the importance of the urethra in this connection, I have been misquoted, and I would limit it more especially to congestive conditions of the upper segment of the urethra. I believe that these conditions give rise to a reflex irritation, as I have explained in a paper read before the American Dermatological Association, 1884. When we meet with cases of rosacea, especially in women about the time of the climacteric, constitutional treatment directed to the pelvic organs is usually decidedly beneficial. In the treatment of acne, I resort to both constitutional and local measures, and whenever it is necessary I use the curette and massage. I believe that sulphur, in its various preparations, as Dr. Robinson said, has a pronounced curative effect, and is probably our best local remedy, although ichthyol, salicylic acid and resorcin may be of advantage in particular cases. Suppose a young girl from 17 to 20 comes to me with these acne efflorescences; my first care is to find out the condition of the lower bowel, whether she suffers at the time of menstruation, whether the periods are prolonged or shortened. In brief, I try to get the pelvic region in as normal a condition as possible. I use local measures on the lesions themselves, as most of us do. My favorite application is the following:

Sulphuret of potash	1 dram
Sulphate of zinc	1 dram
Alcohol and camphor water, each	1 ounce
Aqua rosæ	2 ounces

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For internal use, I frequently prescribe the following on account of its beneficial effect on the pelvic viscera, and having good effect in lithæmic states generally; there is very frequently if not most commonly such a diathetic condition in the middle-aged female:

Sulphate of quinine	25 grains
Sulphate of magnesia	1 ounce
Dilute sulph. acid	2 drams
Tincture of nux vomica	1-2 dram
Wine of colchicum	
Fld. Ext. of ergot	
Glycerine	aa 3 to 5 drams
Aq. Dist	q. s. ad 4 ounces

Dessertspoonful in water mornings on rising; sometimes a dose or one-half dose at night.

Should be taken mildly diluted, then one-half tumbler of water in sips directly after.

DR. ALLEN.—I have not very much to say in connection with this subject. I believe more in the external treatment than in the internal, and I think acne in that respect stands on a par with eczema of the infantile type. Most babies with eczema are fairly healthy and there are no indications for internal remedies. The same is usually true of acne. It is not uncommon for me to see a patient whose face is covered with the papules of acne, but who gives no symptoms or indications of constipation or other internal derangement.

As regards the external treatment of these cases, I lay great stress upon the expression of each tiny comedo, some of them so small that they can only be seen with a magnifying glass. Many of these lesions must be searched for diligently, and when they are all gotten rid of, the patient is practically well since new papules do not develop. If these lesions were of internal origin, one would expect a recurrence after a very short interval, whereas many patients will go on for the rest of their lives, or at least for many months without the necessity for further local treatment, and many of them will recover without any internal treatment whatever. I cannot reconcile that state of affairs with the theory that acne, in the majority of cases, is due to internal disorders. I recognize the fact that it is very difficult to cure those who have one of the so-called diatheses, and persons of certain texture of skin and peculiar conditions of tissue. I believe that deep-seated lesions are often due to something more than the local surface infection, but even in acne which might be called *abscedens,* where deep-seated pustular and boil-like lesions exist, and where there is apparently infection underneath the skin and through the tissues from within, I believe the eruption is due primarily to an infection which extends from one follicle to another, through tissues of least resistance.

I did not think of discussing this question, but it is a very interesting topic,

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and I will only advance these few personal views, which differ somewhat, I believe, from those usually held.

DR. FORDYCE.—I agree in the main with the views expressed by the reader of the paper and Dr. Robinson that local conditions have more to do with acne than general conditions. At the age of puberty, when the horny layer of the skin is active, we have a hyperkeratosis. The comedo formation is due to hyperkeratosis of the follicular orifice, and for that reason I believe that the use of local remedies to produce scaling of the skin is indicated. For this purpose I prefer sulphur, betanaphthol and green soap; the latter particularly, I consider one of the best applications we have. I have not seen these patients much benefitted by the treatment of general conditions, such as anæmia, or digestive disorders.

I have seen massage, as done by non-professional persons, give rise to the infection of other follicles and make the case very much worse than before. I have seen the disease spread to the neck and upper part of the chest as the result of massage. This would indicate that an organism was the cause of the trouble, and that infectious matter may be conveyed from one follicle to another by massage. I believe in the curette in certain cases, and regard soap and sulphur the best preparation we have in the treatment of this affection.

DR. CORLETT.—I did not hear the first part of this paper, but agree in the main with Dr. Fox, that local applications are of more importance than constitutional measures in the treatment of acne vulgaris. I have not been able to associate acne with any deranged condition of the general system. I have never been able to benefit these patients by internal medication or bathing, nor have I observed any good effects from the enforcement of a special diet. In my experience, constipation is fairly uncommon in people with acne. These patients are usually young and robust, taking plenty of exercise and bathing frequently.

As far as local applications are concerned, I believe that sulphur and boric acid and alcohol are very valuable remedies in the treatment of the affection. I have used the curette, as advised by Dr. Fox, but not with his success. I prefer to the curette an ordinary bistoury; it takes longer to do the work, but I think the results are better. Recently, I have used the X-ray in the treatment of acne, and while the results obtained in certain cases have been very striking, I am not yet prepared to speak of the final outcome of this new method in this connection.

DR. DYER.—I must live in community in which acne is a little bit more common and constipation more usual than in the localities where those who have previously spoken on this subject reside. For me, it is exceedingly unusual to find a case of acne in which constipation does not exist, and I am satisfied in my own mind that acne, as it occurs in my practice, is generally associated with constipation. After the constipation has been corrected, and the eruption on the face improved or cured, I have frequently seen a relapse of the latter with a recurrence of the constipation. As a matter of fact, at least eight out of ten of my acne patients suffer from constipation, although

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sometimes it is difficult to get such a history. It often requires close questioning to get at the facts.

So far as the local treatment of acne is concerned, I have followed the various methods suggested, and I have found that in order to benefit these patients we cannot follow any general rule, but must individualize. I do not think that a wholesale curettement is justifiable in every case. I believe that when the lesions are hard and deep-seated, the curette or lance is necessary, but I disagree with Dr. Fox in his sweeping condemnation of lotions and salves.

DR. C. J. WHITE.—I have had no experience with the operative treatment of acne. Here in Boston we have success, in the majority of cases, by the use of soaps and washes, excepting in a certain minority of instances, where no form of treatment seems beneficial. These cases are represented by the small types of acne, where the lesions disappear only to recur in the course of a few months.

DR. HARDING.—I think the individual must be considered in all cases of acne. There are many cases where the mechanical treatment is of advantage, and others where local applications are preferable. In the class of cases referred to by Dr. White—the small, recurrent type of the disease—I have found that internal treatment, particularly the internal administration of ichthyol or ergot, is often beneficial, even without any external application. I believe that in this class of cases the eruption is dependent upon a congestive condition of some of the internal organs, which must be relieved. In some cases, an examination of the gastric contents has revealed a lack of hydrochloric acid, and here the question arises whether fermentation was not the cause of the trouble.

DR. BRONSON.—At the last meeting of the Association I expressed my views with considerable fullness in regard to particular features of acne, and the opinions expressed then I still entertain. I am perfectly convinced in my own mind that the fundamental, the essential factor of acne is a structural trouble incident to the adolescent, development period; that this is the *sine qua non* of the disease. Therefore, in our treatment, if we would be successful, we must address ourselves primarily to this structural trouble. This does not imply that there are no accessory factors which have an important bearing on the disease. They are exciting causes, frequently, but they are not the primary factors. All the systematic, constitutional troubles that have been referred to as having to do with the occurrence of acne constantly occur without producing acne. We may have all of these in their most aggravated form without acne, and I am convinced that in order to have acne you must have this primary structural defect. It is all very well to try and ferret out the various disorders which may exist, the gastric or intestinal disturbance, the pelvic congestion, etc.; they should receive our attention, but I am not willing to relegate to the general practitioner the treatment of acne. I believe we know better what is the condition of the skin in these cases, and that our methods of treatment are better.

As to the anatomical changes in these cases, Unna and others have demon-

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strated this hyperkeratosis of the skin, with alterations in the interior of the follicle. The secretion, instead of being purely oily, is a mixture of oily with corneous matter, resulting in an inspissation of the contents, and a comedo is formed. Furthermore, there are germs which have the potency to do great injury to the skin; these may remain dormant until there comes a wave of irritation from some other part of the body, which acts as an accessory factor. The comedo and its contents acts as a foreign body, and inflammation is the result. In a given case it may be difficult to decide to which of these factors we should attach the greatest importance. In my opinion, if we address ourselves to the primary trouble, we will succeed in the large majority of cases. By emptying the follicles, removing the hyperkeratosis of the skin and by thorough local disinfection we can usually produce a steady improvement, very nearly what you would expect in a true parasitic disease. In many cases of acne there is an outbreak like that of rosacea; the lesions will appear with considerable suddenness, but always in an area of diseased follicles. When the disease begins to crop out again after a thorough disinfection, it does not, as a rule, occur as in rosacea or dermatitis herpetiformis, but you will see here and there an isolated follicle that has not been thoroughly disinfected in the area where it occurred before. The disease affects by predilection certain areas, such as on the forehead, in front of the ears, or nearer the nose. When a recurrence takes place in such area it does not occur in the manner of true reflex diseases of the skin, but shows where the previous local treatment was imperfect.

DR. STELWAGON.—While I agree in some respects with Dr. Fox, I am inclined to take the view of the French writers who believe that when you say acne, you say stomach or indigestion, and, therefore, that in many of these digestives, intestinal antiseptics and laxatives are indicated. The remedy which has served me very well in the treatment of the indurated type of acne, a type not common in the strumous, is cod-liver oil. I have seen over and over again cases which were long and unsuccessfully treated with lotions, etc., get well under small doses of cod-liver oil. I have never seen any beneficial results follow the use of ergot or ichthyol.

As regards the external method of treating acne, I am diametrically opposed to what Dr. Fox said. I think I can get better results from lotions than from the curette. Dr. Fox, in his paper, was not altogether consistent, as in the latter part of his paper he lauds resorcin ointment and soap and other external medicinal agents. In superficial acne I can get better, quicker and more lasting results by the use of lotions than by the use of the curette. Of course, by using the curette the pustules are evacuated immediately, but the disfigurement is temporarily increased and takes time to disappear. With lotions, the lesions disappear gradually without increasing the disfigurement. I do not decry the curette; on the contrary, I resort to it occasionally, but patients will not submit to the treatment as willingly as they will to non-operative measures. Sulphur is probably the specific local application, if there is such. I employ most frequently a lotion of sulphate of zinc and potash, a half to four drams of each to four ounces of water, usually with the addition of a few minims of glycerine; in the reaction which takes place in

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the compounding of this prescription, free sulphur is precipitated. I use this solution strong enough to get an exfoliation of the skin. It also exerts an astringent action.

DR. KLOTZ.—My views regarding acne correspond so closely with those expressed by Dr. Robinson, that I will confine myself to a very few words. I regard acne as the result of secondary infection with pyogenic micro-organism of a seborrhoic condition of the skin, but I treat the secondary process first. As far as necessary I treat surgically by lancing, curetting and antiseptically, with moist applications, usually of bichloride of mercury, in the strength of from 1-3,000 to 1-1,000 combined with an ointment of white precipitate of mercury, etc. After the antiseptic treatment has been carried out, I find that sulphur and similar drugs, in combination with salicylic acid, gives the best results in treatment of the seborrhœa. I pay due attention to the general health of the patient, the condition of his digestion, bowels, etc., but I must say that I usually find very slight indications for internal medication. The effect upon certain persons of particular articles of diet, for instance, cheese, I look upon as an idiosyncrasy. Because cheese or some other particular food or drink causes an eruption of acne in a certain person, I do not think we should forbid it in all cases. Instead of this, we should try to learn the source of the pyogenic infection, which can often be done, and thus recurrences can be prevented. Having lately been paying more attention to this point, I briefly mention a few cases to illustrate this fact:

One patient was a woman who had suffered from acne for three or four years. After several months of treatment she was entirely relieved, but six months later she returned with a slight recurrence. Upon investigation I learned that during the interim her children had suffered from scarlet fever and she had been obliged to nurse them and neglect herself.

Another patient was a teacher in one of the public schools. She had suffered from acne for a long time, of which she was entirely cured after a course of treatment. Subsequently, she was transferred to a school on the lower East side, and within a few weeks her acne recurred. As usual a large percentage of the pupils in the school to which she had been transferred suffered from pediculosis capitis, which I have found is very frequently the source of pyogenic infection. I told her to be very careful not to touch her face with her fingers and to pay particular attention to her finger-nails. She complied with these instructions, and in a short time the acne again disappeared.

In an elderly woman acne of several years standing could be traced back to a purulent otitis. In another case I was able to trace the infection to a boil, and I believe that in many similar instances we could find the direct cause of the infection if we would take the trouble to ferret it out.

DR. ZEISLER.—If this discussion had taken place a year or two ago, I would have added my testimony to what has been said regarding the use of the curette, salves, lotions and so on in the treatment of acne, and I believe I have used them all. I have benefitted many by these means; I have seen relapses occur after all these methods. To-day I will be very brief indeed in whatever I have to say on this subject, because I have discarded entirely and I

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hope forever the curette and the lancet in these cases, use only indifferent applications on the skin, and pay less attention to the digestion and intestinal tract, and simply rely upon the most marvelous of all curative agents in the treatment of this affection, namely, the Roentgen rays. I have a record of 34 such cases which I have carefully observed during the past six months, and the results are so far superior to anything I have ever seen, that I regret the hours of hard labor I formerly spent in the local treatment of acne. I simply want to express my conviction that before a very few years have passed by, every one of you will be very happy indeed to rely chiefly on the use of the Roentgen rays in the treatment of these cases, until we find something better.

DR. JAMES C. WHITE.—I have only a few words to add to this discussion. I agree with what has been said regarding the value of internal remedies in certain cases. I think that in acne, as in other skin affections, we should make inquiries regarding functional or organic disturbances and rectify them to the best of our ability.

With regard to external remedies, while there are certain ones upon which we generally rely, I thing it has been shown that acne may be treated in different ways with about the same degree of success. We must all confess that we occasionally fail to cure these patients, although we may resort to one or all the well-known remedies. Certain types of the affection I can almost promise to cure in a comparatively short time: they are the cases of rosaceous acne in middle life, which we can control by the remedies which often fail in the juvenile cases. I believe that anybody who limits himself to the mechanical method of treating acne, to the exclusion of other methods, greatly restricts his powers of usefulness. Personally, I rarely resort to mechanical methods, as I get sufficiently satisfactory results from the action of such remedies as sulphur, corrosive sublimate and resorcin. I regard these as the sheet-anchors in the local treatment of this disease. In acne of the irritable type, much relief is afforded by soothing applications.

With regard to the treatment of this disease by the Roentgen rays, we have seen marvelous results from it in one type of the affection, namely, in local, long-continued, deep-seated acneiform inflammation of the bearded face. It cures quickly cases which have resisted months or years of treatment with other remedies, and I hope that Dr. Zeisler will give us more information on this point.

DR. HYDE.—I am sure that I need not remind the gentlemen who are present that this is one of the largest subjects that we can discuss in dermatology, and he indeed must be fatuous who would undertake to outline the treatment of acne in five minutes. Certainly, it is in preponderance among all our cutaneous diseases. It is difficult to take a general view of so large a subject. One of the gentlemen has described about 34 cases treated by the X-ray. I also have done my share of this method of treatment. Dr. Bronson emphasized the structural changes in acne; Dr. Robinson, to whom I owe so much in many ways, lays stress upon the germ which settles in the hyperkeratosic skin, and when he described the atony of the unstripped muscular fibers in these cases, I thought of two young six-footers I saw this morning on the

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street, brawny and athletic, with acne lesions covering the surface of the jaws. One would hardly expect to find atony of the unstripped muscular fibers in this class of patients.

To come back to this discussion, I want to say that Dr. Fox reminds me of the description which the poet gives us of the reformer. He stands before a fortified city and simply shakes his fist: after a time down come the ruins, and then he stands there alone. I have followed his work for the best part of the last quarter century have talked and corresponded with him about it. and I still believe—although I cannot go quite so far as he—that his methods are the best in a large number of cases, but not in all. I have used the curette regularly and systematically for years. It is not with me, as with Dr. Fox, the sole method, but I firmly believe it is one of the best methods of treating acne, and I certainly am sure it is my last resort. I am equally positive that Dr. Fox and I could bring a procession of patients into this room who have been cured by this method, and the sight of whom would prove exceedingly valuable and convincing.

I have enjoyed thoroughly Dr. Fox's presentation of this subject. I regard him as a reformer, and I believe that many of us will some day recognize the value of the position he has taken, although at the same time I wish to indorse the value of certain local applications, such as sulphur.

Dr. Duhring.—I do not care to enter upon this subject to a large extent and will confine my remarks to some of the statements made by Dr. Fox. From the paper we are led to infer that the internal economy, viewed as a whole, plays an unimportant part in the etiology of this disease. In order to discuss the treatment of this disease intelligently, the term should be defined in a measure. I would like to consider a certain type of acne vulgaris occurring in an adult, say a person of twenty, man or woman, in what is called average health. The disease has existed, let us suppose, two years, and is of a relapsing character, as acne is apt to be. My success in curing (not relieving) cases of that kind has not been very great with strictly local treatment, although I realize that local treatment is of distinct benefit in most cases, but the difficulty that I have encountered has been that relapses occur from time to time. Patients who have been subject to acne for a number of years recognize this recurrent character of the disease, and it is for that purpose that they often seek advice. The subject of recurrent acne has always impressed me very seriously in connection with the treatment of the disease, and I have always had in mind the possible prevention of such recurrences. I think that every case of acne of the type I am speaking of, in a young adult, between the ages of 18 and 30, should be viewed as an individual case; the treatment of no two such cases can be precisely alike. When I speak of the treatment, I mean particularly the internal treatment, and one having in mind a permanent cure. I have learned from experience that the internal economy is the seat and cause of most cases of acne. If you ask me where the internal disease or disorder is seated I cannot answer at once, because each case presents its own symptoms and form of disease. Not all persons are by nature subject to acne in the same degree, but there are certain internal conditions which predispose to acne in many individuals, and often cause it. One of the most common causes is ali-

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mentary canal derangement, particularly having its seat in the colon, and when this is sooner or later remedied, the acne often disappears without any local treatment. The lesions or disorder which exist in the colon may be so insidious that the patient himself is entirely unaware of their existence, the discovery only being made after careful and thorough investigation. The mucous membrane of the colon becomes more or less chronically affected, mucus collects on the internal surface, functional activity being interfered with prevents the proper assimilation of food and serves as a source of irritation. This has been demonstrated time and time again by the success I have had in some cases which had previously resisted other methods of treatment. I refer to this with the view of calling the attention of the members to it; this condition is a possible cause in some cases of rebellious acne that may come under their care. If these patients are relieved of this chronic catarrhal condition of the colon, they are not only often relieved of the acne, but are at the same time bettered in general health.

Dr. F. H. Montgomery.—I shall limit my remarks to one phase only of this large and interesting subject; that is, the treatment of acne by the Roentgen rays. Dr. Hyde and I can endorse heartily what Dr. White said with reference to the use of the rays in this affection. There is no doubt that the results are brilliant in some cases of deep-seated acne, in which the follicles are being rapidly destroyed, and the usual methods of treatment have been unavailing.

In the more diffuse forms of acne the treatment has given at least temporary benefit: as to the permanency of the cure, we are not in a position to speak, for the reason that we have used radio-therapy in such cases only as an adjunct to other treatment. Radio-therapy cannot be expected to replace treatment of the systemic conditions on which many cases of acne depend. Nor is it quite clear to us how the treatment will prevent recurrence of the disease in the same or new follicles, unless the action of the rays be carried to the point of causing atrophy of a large number—if not all—of the glands and follicles of the affected part of the face. The question then arises as to what effect such atrophy of the glands and follicles would have on the skin five, ten, twenty, or more years later. There is no doubt that radio-therapy is a valuable addition to our present methods in the local treatment of acne, but we do not believe that it is a wise or safe routine treatment for this disease.

Dr. Ravogli.—In 1893 I said that eczema was nothing else than a culture of staphylococcus in the skin. I had made some experiments, the results of which were published in that year in the New York *Medical News,* and subsequently re-printed by the *Practitioner.*

To-day I say that acne, folliculitis and eczema are from the same cause. So long as the micro-organism is absent. we have only a case of soborrhœa, and we do not have pustules produced until the advent of the staphylococcus, which sets up the inflammatory process.

We see two varieties of acne vulgaris, one very common, which is due to an affection of the duct of the sebaceous gland, and then we have the deep-seated form, which we get in acne indurata. I believe that the condition of the intestinal tract has much to do with the production of acne, and for this I have

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the following explanation to offer. With constipation, considerable quantities of sulphuretted hydrogen remain in the intestinal tract; this is carried into the circulation and absorbed, and influences the oxygenation of the blood corpuscles. When this persists for any length of time, anæmia results, and the secretion of the sebaceous glands, which is furnished by the blood, becomes altered in character and consistency. The relation between the fatty acids which make up the normal secretion are displaced, and when the stearic acid predominates over the oleic, an irritation is produced, with shedding of the epidermis and the formation of comedo. Then comes the micro-organism in the shape of the staphylococcus, which produces an inflammatory process and thus we have the development of acne.

The treatment of acne, of course, is the curette, and I still use an old instrument, which was given to me many years ago by my revered teacher, Prof. H. Auspitz. The X-rays, however, I believe will be one of the most effective methods of treatment in the future. In the limited experience I have had with this method, the results were excellent. In addition to it, we can use lotions, and open the abscesses and relieve the obstruction of the ducts.

Dr. Fox (closing the discussion).—I have been amused and somewhat grieved to find among a body of men of such vast experience such manifestly wide differences of opinion in regard to the treatment of a common disease, but I can easily explain this. It is due to various causes, and to the reverence which we have for the old masters in dermatology, to the habit which custom breeds in a man after years of practice and to the hesitancy or inability which most of us have for giving some other plan of treatment a fair trial. I think we are all right in whatever view we take, but we look at a subject too often from simply one point of view. In recommending very strongly the mechanical method of treating acne, I have not said that sulphur ointment had no value. All of these soothing and slightly stimulating applications are more or less beneficial, but what I claim is that they are of little use and usually unnecessary. While a camel's hair brush might be of some use in sweeping the carpet in this room, a good, stout broom would be preferable. So a good, stout curette vigorously used is better in acne than the various lotions and ointments and time-wasting applications to individual follicles.

In regard to the general treatment of the disease, every one knows the change that takes place in an athlete who goes into training; the eye gets brighter, the skin clearer, and if he has any structural disease, a little acne, or even psoriasis, it will disappear. If I had no other treatment than the tactics of the trainer, I could speedily cure most cases of acne and cure them permanently.

As to the sulphur ointments, I have used them in acne and obtained good results from them, but I now have a better method. While reviewing articles on dermatology for a medical journal years ago I found that a German writer strongly advocated the use of the curette in acne sycosis. In criticising the article I said that while this method of treatment might do very well for German skins, it would not do for American skins. A year or so later I happened to try the curette; was surprised at the results of its use and gradually worked into the habit of using it almost exclusively. If you want to honestly test the value of any certain method of treatment, use it to the exclusion of all other

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methods. If you want to find out how much can be accomplished by mechanical means, get a ring curette or a Volekmann spoon, and use it exclusively for a month or more and note the result.

One word in regard to the X-ray treatment. I am waiting patiently for the time to come when acne will be no more as the result of X-ray treatment. I doubt if it will ever come. To those who are using this method of treatment I would say, do not report cases that you expect to cure. When you have accomplished some definite results, demonstrate them. Call in some of your dermatological friends who are not so enthusiastic and let them examine the cases from time to time, and give their report as to the results obtained.

DR. DOUGLAS W. MONTGOMERY, of San Francisco, read a paper (by himself and Drs. Howard Morrow and H. A. L. Ryfkogel) entitled

ANOTHER INSTANCE OF A DISEASE CAUSED BY A FUNGUS

The patient, of whom the following is a history, was first seen by Dr. D. W. Montgomery in the winter of 1900 in the practice of Dr. T. C. Ford. Although Dr. Montgomery had previously seen three patients afflicted with the same disease, the condition then was not recognized. This will serve to indicate how widely clinical appearances vary in different cases. Dr. Montgomery again saw the patient one year later, in January, 1901. Little change had taken place, and for further investigation a nodule was removed from the back of the hand and examined. Capsulated organisms were found, and although few, there were enough for a positive diagnosis. After these preliminary remarks we will proceed with the history of the case.

HISTORY OF THE CASE

Antonio Bonetti came definitely under observation for the disease which is the subject of this paper January 22, 1901. He was then fifty-four years of age. He was a native of Switzerland, and arrived in San Francisco in 1852, at seven years of age. During the following ten years he worked on ranches in San Luis Obispo County and as a miner in Virginia City, Nev. Then he returned to San Francisco, where he resided until his death. He never lived in the San Joaquin Valley, a locality where three of the former patients seem to have acquired the disease. In 1875, at thirty years of age, he married, and his wife died in child-birth in 1892, leaving five healthy children, two of whom died of infantile troubles, leaving three who are still living. The two eldest, boys, lived with their father in lodgings up to within a few weeks of his death, but showed no signs of the disease. The patient

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was not tuberculous, never had contracted lues, and first noticed his trouble as a gradual enlargement of the left hand and forearm seven years before coming under our observation. These continued to increase in size, and the following year the left leg and ankle began to enlarge. Four years thereafter an eruption appeared on the chest, the remains of which were still present. In 1900 an eruption had broken out on the left forearm and hand, and six months previous to the diagnosis being made a similar eruption had appeared on his neck and ears.

Up to this point it will be seen that the progress of the disease was very slow, years intervening between the appearance of the disease in new localities. After he came under our observation the same slowness of invasion was noticeable, for between the very first observation until the making of the diagnosis in January, 1901, a whole year elapsed without any observable progress.

DESCRIPTIONS OF THE LESIONS

On August 21, 1901, there was hypertrophy of the skin and subcutaneous tissue of the left forearm, hand, both legs and left foot. The bones were apparently not enlarged, except where there was a separation of the lower end of the left radius from the shaft. This lesion of the wrist joint caused some pain. There was no history of traumatism, and the patient was unable to tell, at time the history was taken, when the lesion had begun. Over the chest and abdomen there was an irregular pigmentation, the remains of a former papular eruption. This pigmentation was brown, the spots were about the size of a pea, and were angular in shape, with shiny centers, and were strikingly similar to the pigmented spots resulting from lichen planus. The central portion of this eruption was a large brown patch, due to a confluence of smaller lesions. On the left forearm and on back of the left hand there was an eruption of papules, pustules, and nodules, all discrete, but very thickly placed. Many of the old pustules were covered with crusts. According to the patient this eruption and that over the chest were in their inception similar. There was a pustular folliculitis of the neck, so dense on the right side as to form a boggy mass. The right ear was double the normal size, tense, red and shiny, and resembled an acute eczema. There was a superficial elephantiasis of the left leg and foot, and the skin was covered with a papillary overgrowth with a thickened horny layer. There was no active inflammation in this leg, and very little discomfort. His general health was good, and he continued his occupation of bread-making.

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BLOOD EXAMINATION

The blood was normal excepting for leucocytosis and eosinophilia. The microscopic appearance of the cells was practically normal.

Sept. 16, '01—Red cells..... 4,615,000 per c. m. m.
White cells..... 15,100 "
Hæmoglobin..... 75 per cent.

Differential count—

Lymphocytes	1,298= 8	per cent.
Large mononuclears.....	2,627=17 2-5	"
Polymorphonuclear neutrophiles....	8,667=57 2-5	"
Polymorphonuclear eosinophiles....	2,597=17 1-5	"
Myelocytes and basophiles.....	none seen.	
Nucleated reds	"	

Sept. 28, '01—Red cells not counted.
White cells..... 11,600 per c. m. m.

Differential count—

Lymphocytes	953	
Large mononuclears.....	1,856=16	per cent.
Polymorphonuclear neutrophiles....	6,449=55 3-5	"
Polymorphonuclear eosinophiles....	2,343=20 1-5	"

Myelocytes basophiles and nucleated, red not seen.
Microscopic appearance normal.

TREATMENT

At first the patient was repeatedly treated for syphilis without any improvement. Then increasing doses of iodide of potassium were given for a long time without any change in the disease. Then all the usual parasiticide ointments were used without benefit.

From August 30, 1901, to November 1, 1901, we treated the forearm with exposures to X-rays. The X-ray sittings were given three times a week, and in the course of two months all pustules had dried up, the nodules had become flatter, and the color of the lesions had grown darker, resembling the pigmented areas on the chest. During the month of October, 1901, the pustules on the neck were similarly treated, with the result that large crusts formed, but before these lesions could be entirely cured the patient was obliged to enter the hospital on account of the progress of the internal infection.

On December 15, 1901, the patient was weak, had anorexia, severe pain in the temporal regions, fever at night and rapid respirations,

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but there was no change in the skin condition, except the formation of new circinate areas with infiltrated and scaly borders on the sides of the neck which resembled a circinate syphilide.

On January 5, 1902, all the lesions on the chest had broken down into superficial ulcerations, without any discharge. The lesions on the neck and forearm were markedly pustular, and the odor was nauseatingly offensive.

The patient became dyspnœic, feverish, and very weak, and on January 8, 1902, one year after the diagnosis was made, he died.

POST MORTEM EXAMINATION

The body was poorly nourished. The heart, liver, spleen, testes, and lymphatic nodules were unaffected. Except for cloudy swelling the kidneys were also unaffected. The suprarenal capsules were much enlarged, measuring 7 x 5 x 2 c.m. The tissue proper was almost entirely displaced by a friable but fairly dense yellowish white tissue. The left lung was infiltrated throughout its entirety with bodies like miliary tubercles more or less densely placed. The upper lobe of the right lung was also studded with similar tubercles. All the lung tissue was buoyant. Microscopically the tubercle like bodies in the lungs and suprarenal capsules consisted of granulomatous tissue containing numerous giant cells and capsulated bodies. Many of the capsulated bodies were included in giant cells. In the lungs there were extensive areas of broncho-pneumonia.

EXPERIMENTAL INOCULATIONS

The first attempts at cultures were unsuccessful. Later, October 23, 1901, after sterilizing the skin a nodule was removed, and macerated in sterile salt solution. Cultures were then made, and all grew fungus. On November 8th a male guinea-pig was inoculated intraperitoneally with a culture, and took the disease in the manner to be described later. Usually when inoculated subcutaneously guinea-pigs did not take the disease.

HISTOLOGY OF THE SKIN

Histologically the condition was a diffuse granuloma. The horny layer was thickened in some places, while in others it was absent.

There was a slight hyperplasia of the rete, with short processes passing down into the corium. A few leucocytes were found between the epithelial cells, and organisms were seldom found in the rete. Ab-

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scesses in the epithelium, so characteristic in blastomycosis, were very rarely present.

The corium had a diffuse cellular infiltration extending to the subcutaneous tissue. Besides the infiltrated areas around the vessels and appendages of the skin there were other scattered areas of infiltration in the corium. The vessels were dilated. In the infiltration the elastin had been destroyed. Fibrous bundles remained, except in the denser infiltration. Giant cells were occasionally found, but were not so numerous as in the previous cases of *coccidioides*. The infiltration consisted of plasma cells, mast cells, giant cells and leucocytes. The leucocytes were mostly polynuclear.

The infiltration in this unusually chronic case did not go on to abscess formation, and in many instances groups of the organism were found surrounded by an old cicatricial tissue as dense as in cirrhosis of the liver, with each organism in a separate loculus. These groups were of various sizes and contained organisms in all stages of development.

DESCRIPTION OF THE ORGANISM

The organism found in this disease has a double cycle of growth. One in the tissues, and the other as seen on culture media. And these two cycles have no features in common, and this constitutes a marked difference between this organism and the blastomycetes. In the tissue the organism takes the form of a sphere between $3\frac{1}{2}$ *u* and 5 *u*. This sphere is surrounded by a clear capsule having a double contour, and its outer wall is covered with small spines, which are only seen in the fresh specimens. The smaller capsules have clear or granular contents, the larger capsules are filled with endogenous spores. Some of the larger capsules have a clump of large granules in their center, and frequently their capsules rupture, setting free these granules or spores. The spores are circular, clearly defined and highly refractive, and every stage from this spore to the adult body can be traced. No micropyle has ever been found in the capsule, as in the coccidia. No budding or mycelial forms have ever been discovered in the tissues. Frequently when stained with carbol-fuchsin the capsules resist decolorization with acid. Besides the absence of budding forms the most noticeable difference between this fungus and blastomyces is the much larger size of the bodies, and their greater number in the tissues.

In a hanging drop of bouillon or agar inoculated with the pus, two or three mycelial threads will be seen to spring from a medium sized capsule. It is a curious fact that these threads will not grow from

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either a large or small capsule. These mycelia rapidly branch and henceforth their life cycle is of the extra-corporeal type.

The extra-corporeal growth is that of a mould fungus. In bouillon it appears like a fluffy thistledown. On the solid media it is at first white and shiny, and if the media be dry, it sends off aërial hyphæ, forming a fluffy growth particularly well seen on potato and carrot. It grows readily on all the ordinary media, and liquefies gelatine slowly. It does not grow anærobically, and does not form gas on any of the sugars. In the cultures no coccidia-like bodies were found, and as in the tissues, no budding forms have been observed.

EXPERIMENTAL INOCULATIONS

One to two weeks after intraperitoneal inoculation guinea-pigs would show swollen, indurated and at times reddened scrota, which sometimes ruptured and discharged a thick caseous pus. Frequently a sinus developed at the point of injection. A considerable dose of the culture was required to get positive results, but when symptoms developed, the disease was invariably fatal. Numbers of scattered nodules were found in the peritoneal wall. Besides these lesions other organs, such as the liver, kidneys, and lungs, showed scattered nodules, but with no constancy. Frequently there was a general adenopathy, in which the lymphathic nodules broke down into caseous pus. The pigs emaciated rapidly and died between the third and eighth week. They showed neither febrile reaction nor leucocytosis. Wherever there was any pus formation great numbers of the organism could be found.

DESCRIPTION OF PLATES.—Article of Drs. D. W. Montgomery, Ryfokogel and Morrow.

Fig. 1. Section of skin showing organisms in the derma. In the tissues the organism takes the form of a sphere between 3½m and 5m. This sphere is surrounded by a clear capsule having a double contour. The smaller capsule having granular contents, the larger capsule is filled with endogenous spores.

Fig. 2. Mycelial threads as found in a hanging drop of bouillon. These threads spring from the medium sized capsules, and do not grow from the larger or smaller capsules.

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FIG. 1.

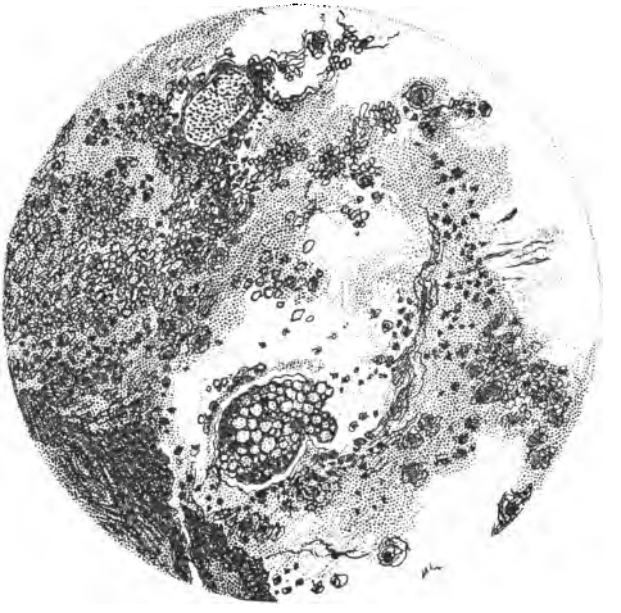
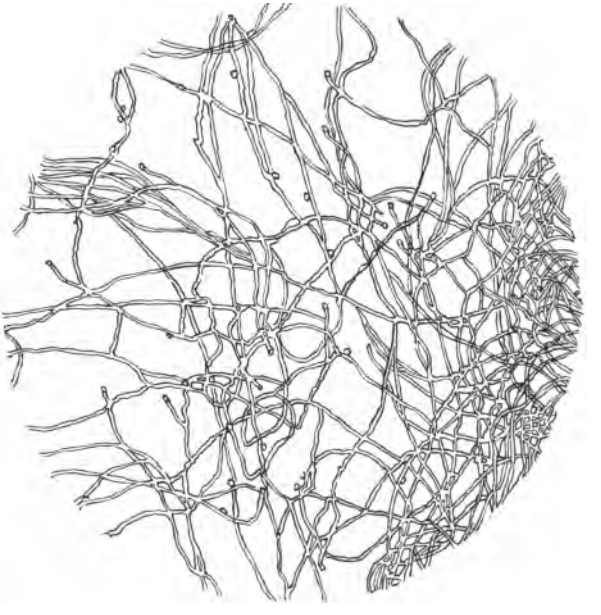


FIG. 2.



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DR FRANK HUGH MONTGOMERY, of Chicago, presented

A CASE OF CUTANEOUS BLASTOMYCOSIS, FOLLOWED BY LARYNGEAL AND SYSTEMIC TUBERCULOSIS; DEATH; AUTOPSY

Aside from the complication with tuberculosis, the case here reported differs in no essential from several others previously reported by Dr. Hyde and myself. The patient came to the Dispensary clinic of Rush Medical College June 27th, 1901. He was first seen by Dr. William A. Quinn, who made a provisional diagnosis of blastomycosis, and brought the man to the main clinic for further study. I am indebted to Dr. Quinn for the privilege of investigating and reporting the case. I am also indebted to Dr. Oliver S. Ormsby for valuable assistance in the histological and bacteriological work, to Dr. O. T. Freer for his care of the patient after he developed tuberculosis of the larynx, and to Dr. E. R. LeCount, of the Pathological Laboratory of Rush Medical College, for performing the autopsy and for a report of his subsequent study of the case.

The patient, W. G., aged 30, was born in America of American parents. He was a railroad conductor, and his health had always been good until the preceding three months, during which he lost some weight. His family history was negative. He had never suffered from any serious illness, and had had no previous disease of the skin. In 1891 he had several lesions (of which he was unable to give an accurate description) on the penis, which lasted about three months. During this period he took medicine internally and had occasional "sores" in the mouth, which remained usually for a few days only. Close questioning failed to elicit a history of any further symptoms of syphilis, or of any treatment after the above-named period of three months. Careful examination of the man's body failed to reveal any evidences of syphilis, past or present. He had been married three years and had one healthy child. He had lost no children and his wife had not miscarried.

The disease of the skin for which he desired treatment began about July, 1899, as a small pimple at the site of a hairy mole. He remembered that he picked the lesion frequently with his finger-nails, and occasionally pulled off the small crust that formed. As the spot slowly increased in size, a few new papules appeared at the periphery and eventually coalesced with the larger area. Portions of the involved skin became at times distinctly ulcerated, while other parts would be

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more or less completely healed over. The border was usually wart-like but soft.

When he presented himself for examination, June 27th, 1901, the cutaneous disease involved the tragus and part of the lobule of the ear and an irregular triangular area in front of and below the ear, each side of the triangle being a little more than three inches in length. The central and upper portions of the affected area were intensely inflamed and in part covered with a superficial slough, the result of six-weeks' treatment with the X-rays. Portions of the border, however, had been protected from the rays, and showed the characteristic features of cutaneous blastomycosis. In such places, the growth was elevated from an eighth to a quarter of an inch, and covered with verrucous and papilliform projections, between which pus exuded from the soft base beneath. In several places, the characteristic bluish-red, smooth, sloping border was present and was studded with fine miliary abscesses, many of which required for their recognition a magnification of from three to four diameters. From these abscesses the usual glairy mucus (from the larger abscesses muco-pus) was obtained, which under the microscope showed a larger number of characteristic organisms in all stages of development and budding.

The man's general health at this time was good, though he had been losing some weight. His left tonsil and the mucus membrane of the left cheek were acutely inflamed, and there was a general pharyngitis of moderate grade, most marked on the left side. The inflammation of the mouth and throat, he said, was of but a few days' duration, and followed the X-ray dermatitis on the outer surface of the cheek.

He was given iodide of potassium and tonics, together with simple local treatment. The pharyngitis disappeared in a few days. During the following two months his general health improved greatly and he gained in weight. The cutaneous lesions became much less elevated, and in small areas were replaced by scar tissue.

On September 7th he appeared with an acute pharyngitis and laryngitis. Four days later the laryngitis was much better, but he was unable to speak above a whisper, and said that for three nights he had had high fever and night sweats. A careful examination by our associate, Dr. E. L. McEwen, showed the presence of moist rales in the apices of the lungs. His temperature was 99.5, his pulse 100, and his sputum contained tubercle bacilli. For further examination of the larynx, I sent the man to Dr. J. E. Rhodes, who recognized a tubercular ulcer

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The Journal of Cutaneous Diseases, January, 1903.

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of the larynx, for which he recommended daily local treatment. The patient from this time until his death was treated chiefly, in the throat department of the college, and also at his home, by Dr. O. T. Freer.

In scrapings from the laryngeal ulcers which Dr. Freer kindly obtained for me, there were large numbers of tubercle bacilli, and also a few blastomycetes. From the mixed cultures obtained from these same scrapings, Dr. Ormsby and I isolated a mould fungus identical morphologically with that obtained at different times from the minute abscesses of the cutaneous lesions. These findings led us to suspect the presence of systemic blastomycosis together with the tuberculosis which we knew to be present. The man grew worse rapidly and died November 22d, 1901.

Dr. LeCount's report of the autopsy[1] states that death was due to "aspiration disseminated miliary tuberculosis of both lungs, with ulcerative tuberculosis of both apices, miliary tuberculosis of the kidneys, adrenals, and liver, and ulcerative tuberculosis of the small intestine." Sections from these different organs all showed tubercle bacilli in large numbers. Of three guinea-pigs inoculated by Dr. LeCount with tissue, two died within a week; the third died after six weeks from miliary tuberculosis of the lungs, spleen, and liver.

With the assistance of Dr. Ormsby, I took cultures, examined fresh tissue, and prepared sections from the larynx, lungs, liver, kidneys, intestines, spleen and adrenals, but found no blastomycetes, though tubercle bacilli were everywhere very abundant, except in the spleen. Evidently the blastomycosis was limited to the skin. The source of the few blastomycetes found in the scrapings from the larynx cannot be determined. They may have been carried there accidentally from the lesions on the face.

Histopathology.—The cutaneous lesions showed the usual structure, details of which have now been given in so many cases that their repetition here is hardly justifiable. The sections showed marked epithelial hyperplasia, with many miliary abscesses in the epithelial growths and also in the corium. The infiltration of the corium consisted chiefly of leucocytes, connective-tissue cells, and plasma cells. A few giant cells were present. Characteristic budding organisms, varying in size from 9 to 15 microns, were found in many sections. Some of the organisms were more or less filled with round, spore-like bodies.

[1]Dr. LeCount's full report will be included in that of Dr. Freer, who will publish a detailed description of the somewhat unusual tubercular condition of the larynx.

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Cultures.—The organism grows well on various media in the form of a mould fungus. It was obtained repeatedly in pure culture from the minute abscesses on the borders of the cutaneous lesions. Morphologically, the organism is apparently identical with one reported by me in the *Journal of Cutaneous and Genito-Urinary Diseases,* May, 1902, page 198, and of which there are more illustrations (Figs. 30, 32 and 33) in the general summary published in the *Journal of the American Medical Association,* June 7, 1902.

The relation of the systemic tuberculosis to the cutaneous blastomycosis in this case is apparently purely accidental. It is, on the whole, surprising that secondary infection with tubercle bacilli does not occur more frequently in cutaneous blastomycosis in which ulcerating, soft papillomatous or even mushroom-like areas are exposed for months or years to the bacteria of the air. Secondary pus infection occurs frequently in these cases, yet of thirty-five reported cases of blastomycosis in two only has tuberculosis been demonstrated.

DISCUSSION

Dr. Hyde.—I have listened to the papers upon blastomycosis with much interest. Some of the pictures which Dr. Dyer exhibited in connection with his paper suggest to my eye the clinical picture of blastomycosis, but not more so than some pictures which Dr. Robinson showed me this morning, which we know had no relation to the disease under discussion.

With reference to Dr. D. W. Montgomery's interesting report, I wish to say that through the courtesy of him and his colleagues I had the opportunity of examining sections of tissue from their cases while I was in California last winter, and in them I could not detect a single budding form. The organism, surrounded by its concentric contours, was present in all cases, but in the matter of budding forms it bore no resemblance to what we see in blastomycosis. The relative rarity of small abscesses in the case reported from the Pacific Coast, the invariably fatal result, and their refusal to improve under treatment such as we found successful in Chicago, would seem to point to some different disorder. At the same time, I cannot speak positively on this point. In California the flora in general differ greatly from that which we see in and about Chicago; the trees and the vegetation are so different that it is quite possible even that fungi share in this diversity. It might be that an infection of the human body in that country with an organism not essentially different from that which we have been cultivating in Chicago might behave differently in that soil and environment and in the East of our country.

I want to corroborate what Dr. F. H. Montgomery said in regard to his case, which was a very interesting one. I am fully in accord with his statement that a certain proportion of patients affected with chronic disorders of the integument exhibit lesions which furnish an open trap for the entrance of

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micro-organisms. That some of these patients should develop tuberculosis would seem exceedingly probable, and instead of this being the unexpected, I should look upon it as to be expected and as throwing no shadow of doubt on the etiological factor in the majority of cases of blastomycosis cutis.

DR. C. J. WHITE.—I would like to ask Dr. D. W. Montgomery whether any investigations have been made in order to demonstrate the presence of these organisms in the valleys of California? I would also ask Dr. F. H. Montgomery if he has ever cultivated these blastomycetic organisms on a large surface, as has been done with those of ringworm, which assume different forms if they are given space enough to grow upon?

DR. BOWEN.—It is a curious fact that these diseases seem to be restricted to certain localities. We have been on the lookout for them in Boston for the past four or five years, and have particularly searched for evidences of this blastomycotic infection in cases of verrucous tuberculosis, but always with negative results, with one exception, and in that instance we found peculiar bodies enclosed in giant cells, which will be shown at the session this afternoon. No cultures were obtained from it, and I do not believe it was a case of blastomycosis.

I should like to ask Dr. Montgomery about the clinical appearances in his case; whether they corresponded with those in the preceding series of cases?

DR. D. W. MONTGOMERY.—We have not been able to find this fungus in nature, and I do not know exactly how to go about finding it. In appearance, it resembles a great many other fungi. It must be widely distributed, as it grows so readily on such a variety of culture media.

From a biological standpoint, too much stress cannot be laid upon the fact that there is an absence of budding. This is a real point of difference upon which the biologist would lay stress in classifying the fungus. I have no doubt that this point separates it from the blastomycotic infective agent which, as I understand it, is a budding fungus. This fungus of dermatitis coccidioides never does bud; we can say that positively.

All the cases of dermatitis coccidioides observed have been in males, and all have proved fatal.

In the present case I first saw the patient a year before the diagnosis was made. I could never have made the diagnosis from the clinical standpoint, although I had seen all the previous cases. This serves to indicate how widely it differed clinically from the other cases. There were large tubers on the skin in the other cases, resembling those of mycosis fungoides and of iodide poisoning. In the case in hand, the infiltration was very pronounced, particularly in the region of the arm; after this region had been exposed for some time to the X-ray, and the pyogenic bacteria were killed, the infiltration subsided, and button-shaped tubercles came to light. These button shaped tubercles were equivalent to the tomato like masses observed in the previously reported cases.

DR. F. H. MONTGOMERY.—Regarding the matter of clinical diagnosis, Dr. Hyde agrees with me that it is not possible to make a clinical diagnosis of

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cutaneous blastomycosis from photographs, or even from an examination of the patient, in every instance. We have, however, found certain characteristic symptoms. In every case there has been seen in some part that peculiar, smooth, sloping, violaceous border, and in that border a number of deep-seated, very minute pustules or abscesses, the smallest of which require for their recognition a magnification of several diameters. On puncture, these minute abscesses give vent to a small quantity of sticky serum or sero-pus, which contains the characteristic micro-organisms.

In reply to Dr. White, I would say that we have made plate cultures repeatedly; and by using different media and subjecting the growth to different conditions, we can produce a large variety of forms from a given organism.

In comparing cultures kindly sent us by Dr. D. W. Montgomery from one of his cases of protozoan disease with cultures from some of our cases of blastomycosis, we find the gross appearances and some of the microscopical forms strikingly similar. As Dr. Montgomery has stated, the most important distinction between blastomycetes and the protozoan bodies is the failure to find budding forms in the latter. Endogenous spore formation does not rule out the blastomycetes, as it has been shown that the latter may multiply by this method. As to the size of the organisms, that varies considerably and is not important. In the fatal case I reported the organisms were large, almost as large as those in the cases of protozoan disease.

With reference to treatment, most of these cases improve under potassium iodide to a certain point, after which little or no progress is made, even though the drug be continued for months. A few cases have completely recovered under this treatment alone. In two cases, the final lesions, which refused to disappear entirely under the influence of potassium iodide, were removed with a few exposures to the X-rays.

Dr. James Nevins Hyde, of Chicago, read a paper (by himself and Dr. Ernest L. Mc Ewen) on

THE DERMATOSES OCCURRING IN EXOPHTHALMIC GOITRE

The dermatoses occurring in the group of affections commonly described in this day as belonging to "inner medicine" do not always sustain definite relations to what may be termed the essential morbid process. Some cutaneous manifestations, as, for example, in the exanthematous fevers, are more or less constant syndromes of the systemic condition. Others, as the xanthoma of glycosuria, are the rare and exceptional concomitants of the general disease.

It is the last-named group of disorders the etiological relations of which are to be viewed with caution if not suspicion. Given such a malady as Asiatic cholera, in which by far the larger number of victims exhibit no changes in the skin, the inference is natural that in the

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exceptional cases the intervention of some novel and accidental agency has wrought the unusual result.

These considerations have force in relation to exophthalmic goitre, known also as Basedow's or Graves' disease, an affection for the most part unaccompanied by skin symptoms, and yet one which at times exhibits in the course of its evolution changes in the integument of the highest importance. For example, under the title, "Cutaneous Affections Occurring in the Course of Graves' Disease," S. E. Dore[1] in 1900, published a valuable report of leucodermatous and other changes in the skin occurring in coexistence with exophthalmic goitre; the author also presenting a survey of the literature of the subject at the date of his paper.

As to the essential or accidental connection of these cutaneous syndromes with the general pathological state, a due reserve can be admitted by recognizing the fact that with respect to the other ailments of the general economy the tegumentary symptoms may be somewhat loosely classified as follows:

In a first group may be named the dermatoses which represent a purely accidental concurrence with symptoms indicative of the general ill health of the subject of the disease. Thus, for example, patches of tinea versicolor may be seen on the surface of the chest of a patient suffering from pulmonary tuberculosis.

In a second group may be included those changes in the skin which are more or less *distantly* related to the essential morbid process. The cutaneous symptoms may be directly due to a non-cutaneous manifestation, which in turn is dependent upon some factor more nearly related to the causal element in the general disease. Thus the sudamina of typhoid fever are the remote outcome of the fundamental morbid process—*i. e.*, infection with the bacillus of typhoid; for several intermediary conditions are traceable, each one of which is more or less essential to that which follows it. A concise expression of the evolution would be as follows: typhoid infection, impression on nerve centers, vaso-motor instability, hyperidrosis, sudamina.

In a third group may be recognized those morbid symptoms in the skin which are *intimately* related to the systemic disease. In illustration of the disorders here classed may be cited the exanthemata and the purpuras of septic infection, in all of which the result is produced by the direct action of the specific organism or its toxines on the structures composing the skin.

To one or another of these categories may be assigned, together with

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the cases the brief records of which are appended, the histories in medical literature of similar import.

CASE I. *Exophthalmic Goitre and Hidrocystoma.*—Mrs. L. D., 39 years of age, married eleven years and mother of two living and healthy children, and had had three miscarriages. She weighed 156 pounds and had previously enjoyed good health. She consulted one of us first in 1884 for relief of a vulvar ulcer which was believed by herself and her husband to have been the result of the employment of a soiled vaginal speculum in the hands of a gynecologist. This lesion healed under local treatment and no consequences were noted.

In the year 1885 this patient consulted us again for relief of a cutaneous pruritus which yielded promptly to simple treatment.

On the 5th of May, 1902, she again sought relief, and on this occasion complained of certain facial lesions the unsightliness of which distressed her. She was now 57 years of age, and had been living in a home surrounded by all the luxuries which large wealth commands. Some weeks before the consultation she had suffered from an enervating fever, to the weakness resulting from which she referred her trouble. During the preceding month she had not been living in a moist atmosphere, and had been, on the advice of her family physician, resting as quietly as possible during the most of the day in a reclining chair.

When examined she was found to have an enlargement of the thyroid gland which had attained the size of a small orange. There was marked exophthalmos, classical tremor, great weakness and some inappetence. Her pulse was 110 to the minute, soft, compressible and full; there was no murmur, either cardiac or vascular. Her color was a dull gray, her mind active, her intelligence (always of a high order) unimpaired. On the slightest exertion she became much prostrated.

The skin of her face was continually moistened with sweat, and was the seat of a score or more of vesicles chiefly clustering over the brow, nose, cheeks and chin. These lesions were elevated, flattened to obtuseness, pea-sized, tense, very well defined, discrete, unaccompanied by signs of inflammation and occurring in no other region than the face. When punctured they gave exit to a clear fluid having the color of sweat. When unruptured some of the larger lesions suggested boiled sago-grains; a few had a dull opalescent hue, others were very slightly empurpled; at a distance, the color was almost that of lead. The relics of a few desiccated lesions, shreds of torn blebs and very ill-defined mottlings of the surface could be detected.

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The lesions, single and in totality, were identical with the symptoms of hidrocystoma ably studied and described by Robinson. We have had an interesting group of cases with exactly similar cutaneous lesions upon the face, in laundresses applying for relief at the Clinic, many of whom had been sweating when enveloped in the moist atmosphere surrounding the laundry tub. The social position of this patient forbade a biopsy of the elements of the eruption.

CASE II. *Exophthalmic Goitre and Telangiectases.*—Miss N. M., aged 24 years; family history good; had bronchopneumonia at 2 years; scarlet fever at 11, with no untoward sequelæ; diphtheria at 14, and measles at 21. Menstruation began at 13, and has been practically normal except for occasional dysmenorrhœa. She gives no history of pelvic trouble.

The patient had goitre at 12 years, after severe sore throat; and the gland has remained of about the same size since the beginning of the disease, increasing in volume slightly during "colds." She taught school from 17 to 24 years of age, and does not think she was especially nervous during this time as the result of the strain. About two and a half years ago she was greatly worried over the sickness of a brother ("blood-poisoning"). There is no history of alcoholism.

Two years ago the patient noticed a marked redness of the skin over the right frontal eminence; this gradually spread over the forehead. At this time she began to have cardiac palpitation on exertion. There were no other subjective symptoms except weakness in the legs. She said she felt "as though her knees would give out under her."

On examination she is seen to be poorly nourished, of sickly appearance and of slender build. Her weight is 112 pounds. The forehead shows a diffuse redness extending to the roots of the hair. On close inspection a fine network of vessels is visible throughout the area, at some points more numerous than at others. Pressure under a glass shows new vessel-formation, with small scattered areas of brown pigment deposit. The redness extends over the cheeks and angles of the jaws to the neck, especially on the left side, where it appears as a tongue-like prolongation over the enlarged left lobe of the thyroid. Part of the redness disappears if the patient remains perfectly quiet for a brief time. New vessels, however, are present over the frontal eminences, the prominence of the cheeks, and over the lobe of the thyroid. The eyes show normal reflexes. Von Graefe's, Stelwagon's and Möbius' signs are absent. There is a very slight exophthalmos. Circumference of neck measure 29½ cm. Both lobes and the isthmus of

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the thyroid are moderately enlarged, the left showing greatest change; the gland is soft and not sensitive. The lungs are normal; the heart is normal in size; there are no murmurs; the cardiac pulse is 130 per minute (while the patient is quietly resting), regular and forcible; a murmur is present over the right side of the neck; there is no unusual cervical pulsation. The abdomen is normal; the pelvic organs were not examined. There is no œdema. There is a well-marked tremor in the outstretched hands. All the reflexes are greatly exaggerated. The urine is negative. There are no red or brown patches on body; the skin is moist and irritable.

CASE III. *Pruritus Cutaneus in Exophthalmic Goitre.*—Mrs. J. C., aged 42 years. Her family history is good; her personal history satisfactory until recent years. Goitre has been present 12 years. Five years ago her health began to fail; there was great palpitation and dyspnœa, with general body weakness. Three years ago cutaneous symptoms began; the skin became irritable; itching at times was intolerable, and the patient constantly excoriated herself in efforts to relieve the pruritic symptoms. Examination showed both lobes of the thyroid enlarged and soft; the heart was normal in size; no murmurs; pulse, 120 to 140, regular; exophthalmos, tremor, urine negative. The skin of the face and of much of the body was reddened, and presented many small, scattered and torn papules.

CASE IV. *Pruritus Cutaneous and Angioneurotic Œdema in Exophthalmic Goitre.*—Mrs. A. C. J., 49 years of age, a widow and mother of two healthy children, had been under the care of a distinguished member of the profession for sixteen years. She had passed the climacteric at 46. The full history of the exophthalmic goitre from which she suffered for a large part of this time appears in the records made by her physician. He consulted one of us on February 27, 1899, in consequence of a complicating cutaneous disorder.

The patient was found in bed, pallid in color, with a goitrous enlargement of the size of a large apple, exhibiting marked exophthalmos, having an exceedingly rapid, weak, soft pulse, and showing distinct tremor. Some weeks before, tubercle bacilli had been recognized in the sputum. She had a slight bronchial cough and dulness on percussion at the pulmonary apices; the skin was for the most part dry. Her treatment for some weeks before had been by internal administration of strophanthus, pilocarpine and strychnine, with absolute rest and a diet strictly limited to milk and the cereal known in this country as "popcorn." It was a question whether this last had in any

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way contributed to the cutaneous symptoms, but inasmuch as the latter persisted for some time after the withdrawal of this cereal from the dietary, a causal relation between the two may be doubted.

When examined the skin was found to be the seat of excessive itching and burning, decidedly most annoying over the lower limbs and the hips, preventing sleep at night and greatly disturbing the digestive processes. In many places the surface was excoriated in attempts to relieve the pruritus by scratching and rubbing. Giant wheals both actively developed and relics of a former activity in the shape of vivid and dull-reddish macules were evident here and there over the surface, especially upon the hips. Complaint was made that in all positions in the bed the skin of these parts gave the patient much distress.

Elsewhere over the body, in trifling measure upon the face and neck, there were pruritic symptoms, evanescent rosy blotches and ill-developed wheals.

By the end of the following month the patient was relieved of the local symptoms by employment of the simpler methods of treatment, including the protection of the surface by the Pick dressing. At the present date the patient is living and has survived a fracture occurring as an accident when ascending the stairs. Her improvement in the diminution in the size of the goitre and the exophthalmic symptoms are unquestionably due to highly scientific management by her physician who has been from the first in charge of her case.

Having in view the instances herein reported, and surveying the literature devoted to the special facts which they illustrate, it is clear that important lesions of the skin, some involving serious structural change in the corium and subcutaneous tissue, may coexist with exophthalmic goitre. About 111 reports have been made of cases of this character, the list including, first, about 49 cases of hyperidrosis; next, each in equal frequency, 15 of pigmentary changes and myxœdema; about 14 cases of simple œdema of the skin; 5 cases of scleroderma, most of them generalized, a small portion representing the circumscribed form; then alopecia, often generalized, and vitiligo; lastly, one or two instances each of telangiectasis, purpura urticaria, erythema, and one only (that herein reported) of hidrocystoma. Among the accidents of the same morbid process, most of them evidently rare, are hæmorrhage from the skin, bronzing of the integument, eczematous and erysipelatous accidents, and localized anæsthesia.

The affections thus catalogued can for the most part be readily assigned to one of the three groups described in the introductory

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paragraphs of this paper. Thus, for example, it is safe to assume that some of the cases recorded as eczematous, urticarial, erythematous, etc., were either accidental concurrences in the general disorder or were remote reflex disturbances due to irritation of the nervous centers. Again, the marked frequency of hyperidrosis in the list of cutaneous symptoms points unerringly to the vascular disturbance which is so fixed an element in the nosology of exophthalmic goitre, and which it is barely possible may be in turn responsible for the frequency of pigmentation after the existence of the malady for a long period. The intimate relationship existing when such disorders as scleroderma and myxœdema accompany or, as may be the issue, succeed the common signs of Basedow's disease is plainly obvious.

With reference to the patients whose cases are described above, cases III. and IV. may be referred to the first or second group defined herein, that in which the cutaneous symptoms are either accidents of the general process, or possible surface indications of the mischief beneath the surface.

With cases I. and II. there is a marked departure from the limits established for the first group. In a single instance (that of case I.) the exanthem may be regarded as distinctly though remotely the result of one of the prime symptoms of the general disease. In the other (case II.) there is a new formation of vessels apparently as the immediate result of the evolution of the malady.

Respecting the first case, that of hidrocystoma complicating exophthalmic goitre, a careful survey of literature has failed to discover any other case. Hyperidrosis, however, a condition in close causal relation to hidrocystoma, as already shown, has been frequently observed. So commonly, in fact, does sweating occur, that it may almost be expected as a symptom in Graves' disease; one of the manifestations of the profound vaso-motor instability found in that malady. Dreschfield[2] observed profuse sweating in forty cases, occurring by day as well as by night, most marked in those presenting the most serious symptoms of the general disease. Watson-Williams[3] records a case in which the hyperidrosis affected principally the right side. It is interesting to note also that in this patient von Graefe's sign, dilatation of pupil and enlargement of the thyroid were most pronounced on the right side. Excitement would be followed by profuse sweating of the right leg below the knee. Hector Mackenzie[4] comments on the frequency of hyperidrosis, especially of the palms, and reports several cases. Others have made similar observations. Occasionally, where

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certain complications have existed, hyperidrosis has not occurred and the skin has been found to be dry.

A special interest, from the point of view of the dermatologist, attaches to the case of hidrocystoma here reported because of the conditions in which the vesicles formed. Robinson has called attention to the circumstance, amply corroborated in our clinical experience, that the special factors of the disease are, first, profuse sweating; second, environment in a moist atmosphere, such as that in which most laundresses labor. With these favoring conditions it is found that the subjects of the disorder are mostly women, and these in middle life or more advanced years, doing work in the summer months. Robinson states, however, that he has observed the disease also in cooks, and indeed in persons who have neither been cooking nor washing. Once only the symptoms occurred in a man, 28 years of age, and then upon one side of the nose only. The observation here recorded is of special interest as showing that hidrocystoma may develop in classical symptoms upon the face of a woman in no wise exposed to a moist atmosphere, and doing no work of the kind middle-aged women often perform. Briefly, it is shown that cardiac and vaso-motor disturbances in exophthalmic goitre are capable of inducing the characteristic lesions of the disease. The pathology of the lesions and their relation to the excretory duct of the sweat-gland at some point in the corium has been thoroughly established by Robinson's demonstrations.

With reference to the second case herein reported, it may be said that hyperæmia of the skin is of common occurrence in Graves' disease, as can readily be explained by the irritability of the vasomotors so constantly present. The intercurrence of telangiectases of the skin, however, is very rare. The writers have been able to find but one reported instance. Létienne and Arnal[5] record the case of a woman (Graves' disease) who presented multiple telangiectasic areas over the entire body. The patient was 27 years old, with a family history showing a decided nervous taint. Her personal history was also bad—hysterical crisis at 12; rheumatism at 15; menstrual and digestive derangements. At 26 she noticed a small red spot over the sternum; similar macules appeared elsewhere, and one year later examination disclosed the following: Round and oval, scarlet to dark-red spots, of variable size (not exceeding the diameter of a 50-centime piece), disseminated without order over the entire body, the shoulders and neck excepted. The spots show a dark center surrounded by a fine network of vessels with arborizations, gradually losing themselves in

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the surrounding skin; they disappear on pressure; there is no desquamation; two larger areas are present above the malleoli, painful on pressure; no spots on the mucous membrane. The right lobe of the thyroid is hypertrophied. The pulse is regular, 105; no exophthalmos; marked tremor and great nervousness.

After a period of treatment the patient seemed to improve, though new spots had appeared and none of the old had disappeared. In this case there was a possible etiological factor in alcoholism, of which the patient gave an obscure history. The reporters of the case, however, think the condition to be one of nervous origin.

Although Osler[6] speaks of pruritus as an occasional symptom in Graves' disease, and reports a case in which it constituted a severe and persistent complication, medical literature is singularly devoid of recorded instances in which this cutaneous symptom was prominent.

Greater interest attaches to the subject of œdema in its various forms as associated with exophthalmic goitre. Numerous cases are reported, and the discussion, which is always full, leads by natural and logical sequence to a consideration of myxœdema and scleroderma as related to Graves' disease. Some degree of œdema is present in a large proportion of all cases. It varies in its nature and location. It may be persistent or fleeting; pitting or non-pitting; symmetrical or non-symmetrical; with and without albuminuria. The hands, eyelids, face and neck, ankles and legs are common sites. Maude[7] has divided the œdema of Graves' disease into three classes: (*a*) from cardiac insufficiency, generally in severe cases; the œdema may appear suddenly and become general; (*b*) of nervous origin; slight swelling of instep and lower legs, without cardiac insufficiency and albuminuria; (*c*) transitory œdema; irregular, unsymmetrical, lasting but a few hours; the arms, hands, neck and face are usually selected. This class suggests a type of œdema analogous to or identical with that found in giant urticaria; which skin lesion is mentioned by Möbius[8] as occurring in Graves' disease. Maude's classification would seem to be somewhat deficient, as in it no place is found for œdema of renal origin nor for the brawny infiltration (mucoid) which is present when myxœdema is a complication. Hector Mackenzie[9] writes that it is common to find œdema of dependent parts in debilitated subjects of Graves' disease from gravity and an enfeebled heart's action, and quotes Basedow as having seen in emaciated patients swelling of the joints and tissues of abdomen, as well as non-pitting œdema of the legs. He reports seven cases of œdema of the eyelids, in three of

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which the condition persisted after recovery; two of œdema of the legs, one of which showed persistent albuminuria after disappearance of the swelling; and two cases of persistent, probably mucoid, infiltration of the connective tissue of legs, suggesting myxœdema. Vigouroux[10] has expressed the opinion that the swelling of the eyelids is not always true œdema, but rather a condition due to paresis of the orbicularis muscle. Dreschfield[2] noted transitory œdema in several of his cases, and in Watson-Williams'[3] case œdema of the legs was the first symptom noted.

The relation of Graves' disease to myxœdema is one of exceeding interest, and inasmuch as the condition of the skin and subcutaneous tissues plays an important rôle in the diagnosis of the latter, a consideration of the relation between the two diseases comes properly within the scope of this paper. A number of cases have been observed in which exophthalmic goitre has been followed gradually by myxœdema, with all the cutaneous changes which attend that disease. Kowalewski[11] was among the first to report an instance; an epileptic, with well-marked symptoms of Graves' disease, showed, after a paroxysm, swelling of the feet, legs and face (character of swelling not given). Later mental hebetude developed. He considered myxœdema as an expression of a severe type of Graves' disease. Sollier[12] reports a rather peculiar case in which the myxœdematous (?) symptoms developed first. The patient suffered with pains in the hand. These became swollen, the swelling gradually extending over the entire body. Later the symptoms of Graves' disease came on. When seen by Sollier there was swelling of the entire body, *atrophy* of the thyroid, nervous irritability, exophthalmos, tachycardia, tremor, pigment flecks over body. Under electrical and hydrotherapeutic treatment all symptoms of myxœdema and nearly all of Graves' disease disappeared. One is not fully convinced that in this case myxœdema was present. In von Jaksch's[13] case typical symptoms of Graves' disease were present; the patient also showed a non-inflammatory, non-pitting swelling of both legs, which gave the impression that some substance more resistent than water was deposited in the subcutaneous tissues, suggesting strongly myxœdema. Williams' case[14] was that of a woman of 30 with Graves' disease, treated with arsenic and change of climate, recovery following. Five years later she became languid; the face, arms and hands were puffy; there was no albuminuria. Myxœdema was diagnosticated, and recovery followed the use of iron and arsenic. The same year Joffroy and Achard[15] published a case of a woman of 23

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who presented at first the picture of Graves' disease; later, the goitre and exophthalmos disappeared; she became very weak; œdema of the feet, legs, body and face developed; there was great mental apathy; death followed, and the autopsy revealed hyperplasia of the connective tissue of the thyroid, with disappearance of parenchyma. Putnam[16] reports a case in which the existence of Graves' disease is somewhat uncertain. A woman of 55 years, in whose family myxœdema had occurred twice, developed typical myxœdema, with usual skin changes. This, however, was preceded by two symptoms of Graves' disease. struma and tachycardia. Under thyroid treatment recovery ensued. Four cases are reported by Baldwin.[17] (1) A boy of 10 years, sluggish, overgrown, mentally dull; skin dry, harsh, inelastic and puffy; at 6 years he had heart trouble, pronounced at the time to be Graves' disease; recovery occurred under thyroid treatment. (2) A girl of 14 years with typical Graves' disease; six years later a typical myxœdema; improvement under thyroid exhibition. (3) A girl of 15 years with tachycardia, exophthalmos, tremor, goitre; after six years; mental hebetude, intolerance of cold, poor circulation; skin dry, harsh, inactive; cured with thyroid extract. (4) Woman of 44 years; nervous history; Graves' disease for four years; later, mental hebetude, intolerance of cold, melancholia; skin harsh and dry; face swollen; cured with thyroid extract.

Loew [18] considers the œdema of nervous origin to be myxœdematous or premonitory of myxœdema. He reports two cases: (1) A woman of 23 years, with typical symptoms of exophthalmic goitre; in addition, pigment spots everywhere present, with patches of vitiligo at elbows and knees; the lower part of the legs swollen; skin hard, tight, very slightly pitting; the dorsum of the feet not affected. (2) A woman aged 24 years, with Graves' disease; the lower limbs from middle of thighs to dorsum of foot swollen, hard, inelastic, non-pitting. A case of Gautier's[19] is reported briefly. In 1894, Graves' disease; improvement; in 1895, recrudescence; improvement; in 1898, myxœdema; hard, fibrous thyroid; improvement under thyroid treatment.

Pasteur[20] reports the case of a woman of 65 years who developed Graves' disease twenty years before (1878). In 1886 she presented typical symptoms; under observation the enlarged thyroid became atrophic (effect on pulse rate not reported; in 1893 the patient had permanent bradycardia (30—55), cardiac dilatation, apathetic face, altered voice, sensitiveness to cold, and clumsiness of fingers. Oncoming myxœdema was predicted. Death occurred in 1900, preceded

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by extreme cardiac insufficiency. At the autopsy, marked sclerotic changes were found in the thyroid.

Hirschl[21] discusses the relation between Graves' disease and myxœdema, and reports the case of a woman of 33 years, with fairly good history. In August, 1899, symptoms of exophthalmic goitre developed, following a fright; in October palpitation became less, mental hebitude developed, the thyroid became dense, the legs became swollen and hard, and the skin of the face thickened. The left leg was increased in size, smooth, non-pitting, reddish-brown in color; the swelling ended abruptly at the ankle. The right leg was similarly but less extensively affected.

The close pathological relationship existing between myxœdema and scleroderma has been shown by Jeanselme,[22] Singer,[23] and Hektoen.[24] It is not surprising, therefore, in view of what has been said of the association of myxœdema and Graves' disease, to find that occasional instances of the coexistence of scleroderma and exophthalmic goitre are recorded. Grünfeld,[25] in 1896, found three cases in literature; the first by von Luebe in 1875, the second by Kahler in 1888, and the third by Jeanselme in 1895. He himself reports the fourth case. A woman with well-developed Graves' disease was attacked later with scleroderma of moderate severity; a cure was effected with thyroid extract. Osler,[26] in a masterly article on scleroderma, mentions one case associated with Graves' disease. A man of 40 years suffered from exophthalmic goitre for two years; the symptoms were typical; scleremic changes then developed in the skin of the legs below the knees. He also records two cases in which tachycardia was present. He found, in reviewing the reported cases of scleroderma treated with thyroid, that of ten cases two were cured, seven were improved more or less and one was not benefited. Dupre and Guillian[27] report a case in a woman of 33 years; goitre appeared at 13 years; exophthalmos at 14 years; later a clear symptomatology of Graves' disease was recognized; the signs of scleroderma developed at 24 years; the hands, forehead and nose were affected. This patient was of decidedly neurotic type.

Pigmentary changes in the skin have been frequently observed. Vitiligo is mentioned by Rolland[28] in his thesis as occurring in exophthalmic goitre. Raynaud[29] reports a number of cases. Marie[30] records a case of generalized vitiligo, with areas of brown pigmentation. His description of the spots on the thighs suggests possible telangiectases. Lucy[31] reports a typical case of Graves' disease in which extensive patches of leucoderma were present, as well as areas of

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brownish pigmentation. The vitiligo began several months before the general disease, but increased greatly during the course of the latter. In this case there was an evident distribution of the patches along the course of the ulnar nerve. Campbell[32] observed a similar combination of leucoderma and melanoderma in three cases of Graves' disease. In all there was a tendency to bilateral symmetry. The pigmentation of the skin may be localized or diffused. Perry[33] reports an interesting case of a woman with exophthalmic goitre who presented a diffuse generalized pigmentation of the skin. There were no evidences of Addison's disease, and under treatment, extending over a period of several months, the bronzing disappeared almost entirely. Burton[34] records a case with pigmentation of the face, neck, axillæ, back and genitals; Graves' disease was present, but Addison's disease was not excluded. Drummond[35] mentions six cases with localized pigmentation; one showed areas of leucoderma also. Nichols[36] saw a woman and Dore[1] has reported pigmentation and purpura in two different patients with exophthalmic goitre, in whom large pigmented areas appeared. When Addison's disease is associated with Graves' disease, as in the case of Krüella's,[37] the pigmentation rather than an anomalous becomes a cardinal symptom. Other trophic changes have been noted. Among these alopecia is common. Yeo[38] saw a case in which there was falling of the eyebrows, at first unilateral, corresponding to the side presenting the goitre and exophthalmos; later both sides were affected. Barnes[39] reports a case with universal alopecia. Smith,[40] one with general alopecia and glycosuria. In the fifteen cases observed by Mackenzie[9] five showed alopecia in varying grades.

Other dermatoses to be mentioned are urticaria, reported by Bulkley[41] and Rolland;[28] and eczema, observed by Zeleneff.[42] Gangrene of the skin has also been recorded.[28]

In a contribution to the general subject under discussion, where the cutaneous syndromes of exophthalmic goitre have been chiefly considered, the questions of moment respecting the etiology and pathology of Graves' disease may be left to the investigators in the field of inner medicine. At this time it will serve no useful purpose to inquire with scientific precaution into the value of the theories of origin of exophthalmic goitre; whether, for example, there is in these cases a hyperthyroidization; whether there is a primary change in the nervous centers radiating to the thyroid gland; or whether the gland itself first secretes a toxin, which later acts as an irritant to the nervous centers. By post-mortem examination as well as biopsies of the tissues of the

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organ, it has been made clear that in many cases after a period of morbid activity the glandular tissue of the thyroid is destroyed by a species of disintegration (cystic, collagenous, colloid, etc.), and that after disappearance of the parenchyma there is left chiefly an hypertrophy of the connective tissue. The persistence of many of the symptoms of exophthalmic goitre after such complete destruction of the secretory tissue of the gland, would militate against the theory of continuous intoxication of the system from that source.

The influence of the nervous centers and nervous tracts in the production of such cutaneous symptoms as the *tache cérébrale* or the lesions of herpes zoster is fully recognized. The established coexistence, in certain cases, of scleroderma and exophthalmic goitre, if common etiological factors can be demonstrated for the two, would point to their nervous origin, seeing that the circumscribed (morphœa) type of scleroderma is often displayed in lesions distributed along a single nerve tract; and in the generalized form of scleroderma the early œdematous pitting stage of the disease suggests in a striking manner some of the symptoms of myxœdema with which disease also, as shown above, exophthalmic goitre is frequently associated. On the other hand, the cutaneous symptoms in lepra, though in some instances distinctly traceable to implication of the nerve-trunks, as when anæsthetic or hyperæsthetic symptoms can be recognized, may also develop without any alteration of cutaneous irritability to heat and pain, and may thus have their remote origin without question either in the bacilli of lepra or in the toxins of such micro-organisms.

The prime symptoms of exophthalmic goitre are usually enumerated as enlargement of the thyroid gland, exophthalmos, tremor and tachycardia. Every clinician knows that of these supposedly essential symptoms each in different cases may be wholly absent; so that, notably, a patient with Graves' disease may neither have bulging eyes nor a goitrous swelling. From the point of view of the dermatologist and of the diagnostician, questions of interest arise when, in the absence of one or more of these prime symptoms, dermatoses occur of unusual type or of doubtful origin and relations. Problems of a novel sort would probably be presented to the consideration of a physician confronted with a group of newly formed blood-vessels in the skin of the face, accompanied by distinct tachycardia, without either exophthalmos or thyroid enlargement; and the same would be true if the cutaneous lesions were those of hidrocystoma, or consisted of two or

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more morphœa patches on the side of the neck, or of an attack of angioneurotic œdema affecting the general surface of the body.

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DISCUSSION

DR. FORDYCE.—At the last meeting of the Association I showed a photograph of a case of excessive pigmentation of the skin in Graves' disease. The parts of the body exposed to the light showed the pigmentation most intensely, while it was entirely absent in those areas where the abdominal folds came together.

DR. HARDING.—I would like to mention a case of alopecia occurring in the course of Graves' disease. In this case, the principal symptom was the exophthalmos, the other symptoms being lacking for a long time. The alopecia areata at first consisted of a few patches, which responded to treatment. There was a recurrence, however, the following year, and this proved more obstinate to treatment. A year ago there developed total alopecia of the scalp, followed by alopecia of the eyebrows and gradually extending over the body. This last attack has refused to respond to treatment.

DR. HYDE (closing the discussion).—In some of the cases of alopecia occurring in the course of Graves' disease, the loss of hair has been limited; sometimes the pilary growth of the eyebrow alone is lost; sometimes that of the scalp.

The pigmentation in these cases is a very interesting feature. I would like to know whether it is more or less intimately associated with the general process, or has relation to the tachycardia and the excessive diaphoresis which occurs in some patients affected with exophthalmic goitre.

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Afternoon Session

DR. WILLIAM T. COUNCILMAN of Boston, read (by invitation), a paper, with demonstration by lantern slides, on

THE LESIONS OF SMALLPOX, PARTICULARLY THOSE OF THE SKIN

ABSTRACT.—The material on which the report is based consisted of 52 cases of smallpox autopsied in Boston in the last year. The autopsies were made a short while after death and were complete. The material, both skin and organs, was chiefly hardened in Xenker's fluid, which gave better results than any other reagent. The cases embrace all stages of the disease, and among them were three cases of purpura variolosa. Portions of skin from various parts of the body were preserved from every case and a number of sections of each were made. It was not possible to secure any material from the prodromal rash, but all other lesions were studied.

From the study of this large amount of material it was possible to follow out the development of the typical lesions and to find every variation of the type. The character of the lesions is due to the peculiar action of the virus and the anatomical characteristics of the tissue. The virus undoubtedly is brought to the skin by means of the blood. No other supposition is possible. The first lesions found consisted in a degeneration of the cells in the lower layers of the epithelium combined with exudation. There are two forms of this degeneration. First, the destruction of the nucleus combined with œdema of the cell. The nucleus becomes shrivelled, distorted, and lies as a folded irregular mass within the œdematous vesicle of the cell. The shrinkage of the nucleus seems to be due to the passage from it of its fluid contents. The chromatin of such nuclei may remain for some time. This degeneration is chiefly seen in the cells of the prickle layer. The other form of degeneration is that described by Unna as the "balloon-like" degeneration. This is the form most generally met with, and seems to be a later form of degeneration than the first mentioned. It is seen especially in the Malpighian layer of cells. These cells become swollen, homogeneous, refractive, stain deeply with eosin, and sometimes take irregularly the fibrin stain.

In the very earliest stage of degeneration there is evidence of exudation. At first this is purely fluid; the cells are forced apart by the exudation, and spaces are formed between them. These spaces

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are separated from one another by bands composed of adhering epithelial cells drawn out as fibrillæ. The lesion advances with an increase in the amount of exudation which still further enlarges the spaces between the cells and finally the septa rupture, the exudation within being in a large space which lies beneath the upper layers of epithelium. The papule is simply a small vesicle in an early stage of formation. The exudation extends laterally, giving to the section of the lesion somewhat the appearance of a mushroom. In the early stage of the lesion there is little affection of the corium. The vessels of this show hyperæmia, and there may be a slight œdema, but there is no cellular infiltration.

The change of the vesicle to the pustule takes place slowly and is marked by a greater number of cells in the exudation and by cellular infiltration in the corium around the vessels. The cells are only in part polynuclear leucocytes. There are among them large numbers of mononuclear cells which come in part from the vessels and in part are formed by proliferation of the fixed cells of the corium. The cell accumulation never reaches the degree which would be found in a corresponding pyogenic infection of the skin. Even in the most typical pustule at the stage of its greatest size the number of cells within it is never very great. The cells undergo rapid degeneration and nuclear fragmentation, both those in the vesicle and those in the corium.

In the slightest forms of lesion the corium is unaffected. In the more severe forms there is a hyaline fibrinous degeneration of the papillary layer of the corium, often extending deeply. The same character of lesions which are found in the cells of the epidermis may be seen in the epithelial appendages of the skin in the sweat glands, and especially in the hair sheaths and follicles.

In the healing of the lesion the fluid exudation is removed by absorption and probably by evaporation. Processes of regeneration begin early and consist in a growth of epidermis from the edge. The lower layers of the epidermis may be completely formed without any differentiation into the horny layer which seems to advance on all sides from the edges. The mass of exudation which has been converted into cell and nuclear detritus finally lies between two layers of horny cells, the old layer above and the newly formed layer below, and is represented by a scab easily removed.

The umbilication of the lesion may be due to several causes, but the one which is most operative is given by the hair follicles, and to a less

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extent by the sweat glands. The umbilication forms where they pass through the skin, making places which resist the distention of the epidermis by the exudation.

There are various departures from this type. The most common one is due to the passage of the exudation through the typical vesicle to the horny layer, elevating this as a mass, and forming a secondary vesicle above the true vesicle. This was met with in a number of instances. This secondary vesicle may also be the cause of the umbilication, the horny layer adhering more closely where the sweat glands pass through it. A second abnormal type of vesicle formation is given by the elevation of the entire epidermis from the papillary layer. We have had specimens showing the three types in one lesion. A true vesicle being formed first, a superficial vesicle formed over this, and the entire mass being elevated by a further exudation coming from below.

Fibrin enters very little into the exudation, and in most cases was not met with. The amount of hæmorrhage in the exudation varies greatly, and in some cases it was considerable. The cases of purpura variolosa showed everywhere in the epidermis diffuse lesions confined to the stage of degeneration with beginning exudation.

The lesions in the mucous membranes were of the same character as those in the skin, with differences due to the character of the tissue in the two cases, the absence of the horny layer, the greater friability of the cells and the ease with which exudation may pass between them. We rarely found in the mucous membrane such definite vesicles and pustules as were found in the skin, but conditions similar to various stages of the skin lesions were found sufficiently often to show that the lesions were the same. The cornea was free from variola lesions in all cases, though it was often involved by extension of lesions from the conjunctiva and by lesions due to infection by pyogenic organisms.

The cell inclusions so frequently described in connection with the skin lesions were found in all of the early cases. They were invariably present in connection with the earliest degeneration. Concerning the nature of these cell inclusions we are in the dark. They do not correspond to any known form of degeneration of the protoplasm. They are not due to inclusions of other cells nor of red blood corpuscles. They show more or less structure, small, brightly staining points being found within them, lying in vacuoles. They were found in connection with the lesions of the mucous membranes with the same frequency as in the skin, and here again only in the early lesions. If

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these inclusions are organisms, they are different in their morphology from organisms which we at present know.

The lesions of the mucous membranes are further interesting in that they form the point of invasion for pus organisms, chiefly the streptococci, and in most cases the fatal termination seems to be due rather to this secondary infection than to smallpox itself. Not only were the typical lesions of the disease in the skin and mucous membranes made the subject of careful study, but the parenchymatous organs as well. As compared with other infectious diseases, there is in smallpox a less marked degree of general parenchymatous degeneration.

DR. AUGUSTUS RAVOGLI, of Cincinnati, read

A FURTHER REPORT ON NÆVO-CARCINOMA

Two more cases of nævo-carcinoma which I had occasion to study this year have given me the opportunity to submit again this important subject to your consideration. This time, also, one of the sufferers from the affection is a lady about 40 years old, and the other a gentleman 51 years old. The first died last year with cancerous cachexia, showing carcinomatous reproductions in the liver, pancreas, kidneys, etc.

When I saw the lady she had a large patch made up of innumerable cancerous nodules from the size of a split pea to that of a hazelnut, some of a glistening bright red color, others already ulcerated, others vegetating, covering nearly the whole lumbo-sacral region. The whole mass and the surrounding skin was colored dark red, tender and swollen on account of having been exposed to the X-rays, which had started a dermatitis. The lady said that she had found great relief in her sufferings from the use of the fluorescent light. From the extension and quality of the growths, from her general condition, from her statement, taken all together, I did not find it necessary to make any change, and I encouraged her to continue in her treatment. A few weeks later I received an invitation to see the post-mortem.

I must tender my thanks to Dr. Morrell, who was kind enough to let me have specimens of the cutaneous growths and of the different viscera affected.

The lady had had since her birth a non-pigmented nævus on the lumbo-sacral region, which had never caused her any trouble until

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in late years it began to grow, showing a vegetating tendency, and gradually began to grow and in a short time became ulcerated.

In the case of the gentleman the nævus is situated on the left hypochondrium, and is of a deeply pigmented kind. It was originally of the size of a quarter of a dollar. It had never given him any trouble, with the exception that when carrying in his upper vest pocket some instruments needed in his business, these rubbed on the nævus sometimes causing irritation. He was often annoyed by some itching sensation on the growth, which compelled him unconsciously to rub it, and a moisture began to ooze out which stained his underwear. Gradually the nævus increased in size, and when I saw him it was much larger than a silver dollar, round in shape, dark brown red in color, irregularly vegetating, discharging a large quantity of serum of a nauseous odor.

In the case which I had the honor to present to the meeting in Washington, which was published in the *Journal* under the title of Multiple Nodular Melanocarcinoma of the Skin from a Nævus,[1] the tumor was seated on the sternal region and began to trouble the lady only when she was pregnant and the steel springs of the corset were constantly irritating it thus causing an itching sensation and oozing of serum.

In that case the microscopic examination revealed a large quantity of pigment in the stratum lucidum and in the stratum spinosum. An infiltration of large epithelioid cells tainted with dark brown pigment was found in an alveolar structure in the papillary layer, all giving the characteristic appearance of the superficial epithelioma. In the present case the tumor did not belong to the pigmented class, it was simply a nevus verrucosus which was changed into a papillomatous growth.

The specimens taken from the nævus showed the horny layer of the epidermis missing, but the surface is covered with enormous masses of epithelial layers, which have their origin from the stratum spinosium. It is made up of large, nucleated epidermic cells, which remain soft, unable to form a healthy cuticle. The epithelial cells greatly enlarged make a sharp line at the edge of the elongated and enlarged papillæ, where they show some pigment granules. The interpapillary spaces are filled up with an enormous quantity of epidermic cells. The line of demarcation, however, at the papillary layer is still the boundary between the epidermis and the connective tissues, and

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FIG. 1.

FIG. 2.

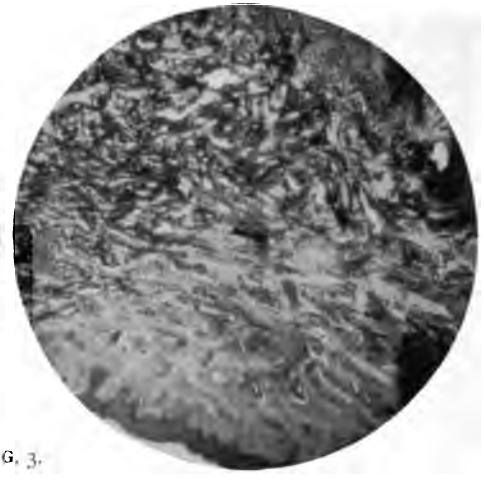

FIG. 3.

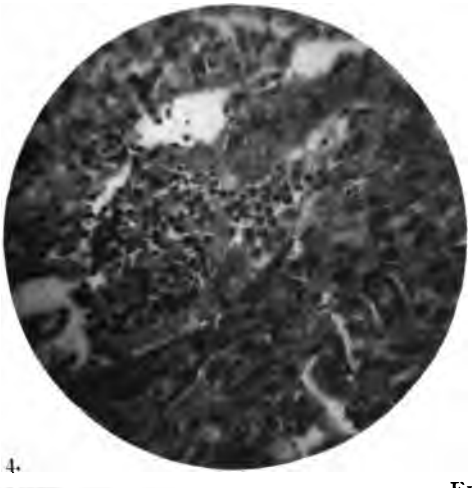

FIG. 4.

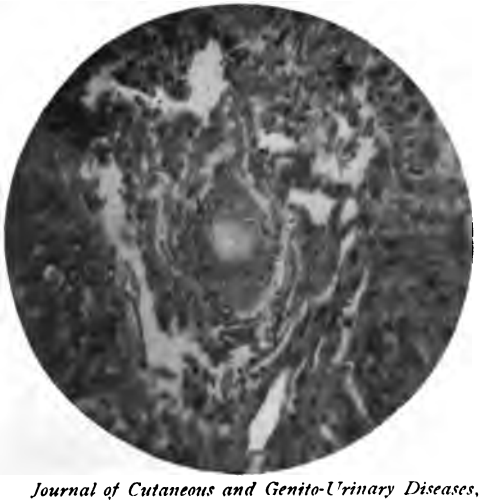

FIG. 5.

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no epidermic elongations from the epidermic strata are found to enter the cancerous stroma.

The papillæ are greatly elongated and in some places show true papillary vegetations, since from one papilla two or three are sprouting. They are not free from cancerous infiltration as infiltrating cells are crowding in their stroma. The same infiltration is found in the subpapillary layer, which gives to the tissue the appearance of an homogeneous mass. In the middle of this mass the capillary blood vessels are abundant and the infiltrating cells are much more crowded in their vicinity. Lymph spaces are well maintained, but in some of these spaces, newly developing carcinomatous nodules are found. The infiltration of the carcinoma is so thick and thoroughly spread that it is scarcely possible to recognize the glands and the hair follicles of the skin. It is easy to recognize that the whole mass is made up of small, distinct, connective tissue alveoli, containing a limited number of epithelioid cells. The alveolar distribution gives to the specimen an aspect of variegated marble.

Another specimen taken from a secondary nodule, shows the epidermis normal, the papillæ free from any infiltration, the blood vessels enlarged and congested, some exudation cells can be found between the connective tissues. A mass of carcinomatous infiltration shows in the subpapillary layer of the corion, filling up all of the lymphatic spaces and those between the connective tissue fibers, reaching the subcutaneous tissue. In some places between the infiltrating cells, nests of epithelioid cells form round nodules like plexiform carcinoma, as remarked by Max Joseph in his case. (Fig. 2.) In all our specimens we find that the epithelium forming the carcinomatous nodules shows no connection with the epidermic cells of the strata of the epidermis. They follow the lymph spaces of the corium. In one specimen initial carcinomatous nodules can be seen in the division of a ramification of a lymphatic space, following three branches. The cancerous epithelioid cells are in the middle surrounded by small leucocytes. The alveolus is round and is encircled by connective-tissue fibers in the form of a nest. The surrounding connective-tissue fibers show plainly their corpuscles, which are increased in size as is found in the embryonic tissues.

The elastic fibers are normal in the whole specimen, except around the infiltration, where they are seen to be somewhat thinner. Plasma cells are constantly found. Some of the glands of the skin are also taken into the carcinomatous infiltration, but they are not primarily in-

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volved as we have found in other cases of the ordinary skin cancer. The disposition of the infiltration shows the characteristics of a deep nodular carcinoma, although it has started from a non-pigmented nævus. The epidermic layers take no part in the formation of the carcinoma, as we have found in other cases, where the epithelial cells of the stratum spinosum were mixed with the tissues of the derma. On studying the specimens under a larger power, ⅛, the carcinomatous changes are more visible. The mass shows a larger quantity of round, oval, cubic epithelioid cells, containing large nuclei in a row of two or three together. Between the cells can be seen some fine fibrin threads. The large cells contain a clear and homogenous protoplasm, which is only lightly stained by the different coloring fluids, in some others the protoplasm has a granular appearance. The cells in the alveoli are so crowded that only a few show a round shape, most of them being oval, cubic, or elongated from the pressure.

The nuclei of the cells show the most interesting features, some are thick and marked by a marked contour with granular contents and a small nucleolus. These, on account of their resemblance to parasitic elements, have been referred to the blastomycetes. In some places the nuclei have attained a large size in comparison to the cells, they have a granular substance, and show some appendages or elongations starting from their body.

In many places are to be seen free small organized bodies round or oval in shape, with a darker line in the middle. They readily absorb the stain, and are thus made perceptible with Bismarck brown. Following these bodies in the specimen it seems that in a successive evolution they have appendages or elongations with which they become organized as part of the tissues. Fig. 3 shows very clearly colonies of these bodies in different stages of development.

Fig. 4 shows a pearl with a mother cell in the middle, surrounded by connective-tissue fibers, with many of these small bodies between the tissues, and others already older in the process of organization.

Fig. 5 shows some large peculiar round cells, grouped together in the number of three or four and greatly swollen. They are filled with a quantity of small round bodies, which strongly refract the light. It seems that the immense quantity of these small bodies causes the swelling of the cells, which are converted into so many nests. These bodies when seen under a certain degree of refraction give the idea of being spores vegetating inside of the cells. These mother cells are imbedded in nests of collagenous tissues, which are greatly swollen and enlarged.

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Granules or small bodies resembling those contained in the cells are found in some places between the connective tissues scattered as foreign bodies, and they give the impression of having left the mother cells.

In another specimen some peculiar cells have the appearance of having burst and look empty, showing ragged edges. Without stretching the imagination too much it seems to me that the spores are developed and hatched in the interior of the cells, which are swollen and enlarged. The mechanical irritation and the toxic elements produced by the developing organisms, are to be accounted for by the changes which occur in the connective-tissue fibers and in the lymph spaces. The spores when ripe come out of the mother cell and remain free in the middle of the tissues. They find their way in the lymph spaces and so extend the area of infection or by the lymphatic vessels are carried to the lymphatic glands, where they remain without any opposition. On account of negative chemiotaxis, the leucocytes are powerless against these virulent elements, and the small leucocytes furnish a nourishing culture medium for their development.

The foregoing conclusions are only based on microscopic examination, and lack any support from the bacteriological standpoint. But carcinoma is not the only disease where bacteriology has not yet succeeded in demonstrating the germ growing in the culture media.

Several kinds of giant cells have been often encountered in the various species of carcinoma, which have been interpreted as the result of degenerated epithelial cells in the rôle of foreign bodies.

Buxton[2] concurs in this opinion, and he believes that the most probable origin of the giant cells of carcinoma is the presence of epithelial pearls in the middle of the myeloid cells, and that they are made up by the fusion of the protoplasm of several cells together in a hyaline degeneration.

Fordyce[3] stated that in epithelioma the origin of all giant cells cannot be explained by the presence of foreign bodies or by the fusion of adjacent cells. He has seen, described and photographed nuclei, contained in hyaline cells of a uniform size and appearance, which he says are like cell infiltration in the surrounding connective tissues, and *are probably lymphoid cells* which have invaded the hyaline masses. In other portions of the same tumor epithelial cells in various stages of degeneration are seen to be invaded by nuclei of similar size and appearance.

The opinion that there is a possible formation of new tissue, or at

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least of new cells, in the tumors, from the pre-existence of an organoplastic matter is untenable. In place of new formation, proliferation has been substituted, and new cells and new tissues find their origin in the pre-existing cells and tissues, entirely removing the old idea of a *generatio equivoca.*

The epithelial cells entering into the structure of the carcinoma are identical with those of the different organs but lying in the connective tissues. In the same way the granules of pigment which are found in the tissues of the derma from the nævus are considered also capable of promoting the production of the carcinoma. In my first and third cases of carcinoma from pigmented moles, a large quantity of pigment granules and of pigment cells was found in the carcinomatous infiltration, but the accidental introduction of pigment granules into discolored cells has not much pathological significance. There has generally been attributed to pigmented carcinomata a much higher degree of malignancy, so that they have been called melanomata. The idea of so deleterious an action from the presence of the pigment will be easily dispelled by the consideration of the production of the pigment. The pigment is the result of a metamorphosis of the hemoglobin from the red corpuscles of the blood, which are changed into pigment granules. In a melanoma the presence of the pigment will indicate an effusion of blood in the structure of the carcinoma, which on account of the changes of the red substance of the blood has been converted into pigment.

So far in the pre-existing tissues we have not found any reason for malignancy. From connective tissues, in consequence of the proliferation, will result connective tissues in the form of an organized tumor. The studies of the proliferation and of the morphologic changes of the cells of the carcinoma as bipolar mitosis indicative of malignancy, karyokinesis, nuclear segmentation, cytodiaresis prove that carcinoma cells multiply by irregular and atypical karyokinesis, but they do not give any idea of the origin of carcinoma. In fact there must be some unknown reason, some Deus ex machina, which causes the dormant cells to be waked up to life and produce malignant tumor. Although Unna[4] thinks that the origin of the nævo-carcinomata supports the Cohnheim theory, and that the anomaly of the growth in carcinomatous structure can be imagined as the result of a diminished resistance of the mesoderma, yet he says that the general deleterious action of these tumors is still incomprehensible, without the admission of strong

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elements from the outside, which are nothing else than parasitic elements.

Trauma and irritation in reference to the formation of cancer has always attracted the attention of the pathologists, and we can say that it is the general belief that malignant growths frequently do follow local injuries and local irritations. This finds a support from the analogy to infectious granulomata, especially tubercular and syphilitic lesions which are produced in the tissues and in the organs exposed to trauma or irritation. A serious injury of the tissues usually provokes a strong and a genuine reaction, while a continuous irritation is capable of bringing about only an incomplete reaction which acts strongly on the nutrition of the tissues, making them parts of lessened resistance. The nutrition, as Virchow stated, is a property of the tissues and each tissue has the so-called *vita propria*. In the living organism we can have cells which are dead and the disease be nothing more than the result of the death of cells, as happens in the different degenerations. Parenchymatous inflammations may result from the process of irritation as passive alterations of the nutrition of the tissues. It is not rare for foreign bodies to enter into the organism, and to remain there without taking part in the life phenomena and without destroying the life of the person. Bullets continue imbedded in the tissues, coloring substances introduced for tattooing remain in the skin as dead substances. This, however, cannot be said of those elements which, entering the organism of man and of animals, continue their life as parasites. They live at the expense of the organism, into which they have entered, and for a long time remain and develop without producing apparent disorders. In carcinoma we see that for some time it may remain local without causing any bad influence on the life of the person, but the time comes when it will show its effects on the general system. In the carcinomatous cell we recognize the parasitic symbiosis, a mechanical irritation at first, and the secretion of poisonous toxins afterwards. It remains imbedded in the tissues as a germ, which gradually germinates and proliferates, and then spreads and finds new places and produces systemic alterations. We see before us as factors of the carcinoma two principal points, one a wound, an abrasion, the other an infection. In our cases of nævus the constant rubbing of garments and of instruments on a thin surface, elevated on the surface of the normal skin, was sufficient by friction to injure the tissues and produce a contusion and an abrasion.

Considering the ubiquitousness of infectious agents, an injury in the

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continuity of the epidermis, an excoriation, or an abrasion of the mucous membrane will clearly show the relation of the cancer to trauma. The epidermis and the epithelium are sure protective organs against the entrance of infectious germs, and nothing but an abrasion will permit the entrance of infection.

The arguments in favor of the parasitic origin of the cancer are every day increasing, and the cancerous protozoa of Scheurlen, Darier, Russell, Soudakewitch, Ruffer and Walker will soon find such proof in the researches of Roncali, Sanfelice, Plimmer, Busse and Gilchrist. Some of the peculiar forms of the cells of the cancerous growths to which I have called your attention have already been studied and described by those of the first group as parasites, by others as products of cell degenerations. These products of degenerations are not found in any other granuloma or tumor; they are characteristic and nobody has ever succeeded in their reproduction. Roswell Park[6] with his indefatigable work, in his established authority, asserts that in his laboratory similar appearances have been reproduced in many cases, after inoculation with cancerous material. Not all infectious diseases are produced from bacteria, but there are many classes of other possible parasites which are not yet exactly known. The history of the plasmodium of malaria has thrown light on this subject. The observations and experiments of Roswell Park are of some support to my observation that the organisms grow in the cell. In fact, in order to obtain success in the culture of these cancerous organisms he has closed them in a collodion capsule and so has dropped it into the peritoneal cavity of animals, subjects of experiments. In this way Roswell Park has obtained the growth of these organisms, which when reinoculated into other animals have caused hematogenous infection with nodular formation corresponding to an acute carcinosis.

Now returning to the soft nævi, they have been pointed out by many authors as the starting point of carcinoma, and Lancereaux and Paget have described cases of epithelial melanotic carcinoma arising from pre-existing nævi. Unna[7] indicts the pigmented cells of the soft nævi as a contributing cause in the spreading of the epithelial elements in the connective tissues. Max Joseph[8] follows the ideas of Ribbert, that pigment cells "chromatophores" are the cause of the production of carcinoma from a nævus, and that these cells through some elongations go between the epithelial cells, starting the carcinoma, and the pigment which they produce staining the cells imparts the malignant properties to the tumor. Unna,[9] Bauer[10] and Kolaczek[11] have all seen epithelial

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cells reach the connective tissues of the superficial derma, where they insert themselves. In consequence a series of alterations occur, the epithelial cells dispose themselves in a row and with the irritation they produce cause the connective tissues to close around them, forming in this way the alveoli. On account of a consequent stasis, an edematous condition takes place which increases the nutrition of the epithelial cells, which proliferate in the connective tissues, giving origin to the cancerous foci. Unna, however, adds that the followers of the parasitic theory find that from the entrance of elements from the outside result the changes of the tissues in carcinoma, because nævi always become affected in consequence of a trauma. Löwenthal[12] in a series of 800 cases of malignant tumors, among them 119 cases of carcinoma of the skin and of the mucous membranes, could trace in nearly all an injury of more or less importance preceding the appearance of the malignant growth. M. B. Hartzell[13] refers to two cases of epithelioma, one on the nose and another on the lower lip, in which a wound had been responsible for the production of the carcinoma.

When an abrasion is present infection easily follows. In this respect carcinoma resembles other infectious processes of which the microbic origin has been demonstrated. It happened in the case of tuberculosis that its infectiousness was firmly believed in long before the bacillus had been discovered.

Carcinoma is an infectious disease of a slow, chronic type; from a small insignificant ulcer it spreads by continuity and by contiguity through the lymphatic system, affects internal organs by metastasis, and produces profound alterations of an infectious nature in the general system. In the case of the lady under consideration there is seen a soft, non-pigmented nævus changed into a carcinomatous ulcer, which in less than three years has caused general cancerous affection and death.

Such profound alterations show beyond any doubt the presence of infective elements, which are responsible for the production and the spreading of the carcinoma. It would be too difficult a task even to mention the authors who have studied the parasitic origin of the cancer, beginning with Nedopil, Dariér and Wickham, Klebs, Ohlmaker and Korotneff. It would be too long even to mention the studies of the more recent investigators, such as Plimmer and Roncali, Sanfelice, Foa, Vedeler, Sternberg and Roswell Park. Thoma described coccidia in the nuclei of carcinoma, followed by Dariér, Albarran and Sjöbring. Pfeiffer described ameba sporidium followed by Adamkiewicz,

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Kahave and Nepvean. Blastomycetes were described as fuchsinophile bodies by Russell, as canceromyceta by Niesen, as saccharomyces niger by Mafucci, and as blastomycetes by Sanfelice and Roncali.

Blastomycetes have recently been described by Gilchrist and Busse, and then confirmed by Hyde, Montgomery and others, as the micro-organisms which cause a peculiar infectious and malignant dermatitis, which they have called blastomycosis.

Returning to our subject of carcinoma we find that many experiments have been made in reference to the inoculability of these malignant affections. Positive results have been obtained in mice, rats, dogs and cats by inoculating carcinoma from man into animals, and from animal to animal, as in the experiments of Pfeiffer, Moran and Goujon. Autoinoculations of carcinoma in inoperable cases have been carried out successfully by Han and Cornil and N. Senn[14], who in four experiments has obtained in three the reproduction of carcinoma. H. R. Gaylord[15] has given one of the most interesting and scientific reports of his studies on the paratisic origin of carcinoma, carried on in the New York State Pathological Laboratory. The factor of carcinoma, according to Gaylord, is a protozoon, which he has constantly found in all cases of carcinoma under his examination. He finds the parasite of a different size and appearance according to the age. He has reproduced the disease in various animals by different methods of inoculation, one of which has already been referred to above.

With all these convincing arguments, the origin of carcinoma has not yet been cleared up. A large number of distinguished researchers, such as Fabre, Domergue, Gratia and Lenaux, Kurscherf and Bartsch, Sternberg, McFarland, Duplay, Cazin, Steinhaus, Pianese, Schwartz, E. H. Nichols, Adami, Senn, etc., are still opposing the observations and the results obtained by the others.

From the related observations and experiments it seems to me that carcinoma will be proved to be a parasitic disease. From the pre-existing cells through proliferation we have tumors, but none of malignant nature. Malignancy is the result of infection, infection which comes from outside or from germs which remained dormant in the system, as in hereditary syphilis. From the specimens of carcinoma which I have submitted to your consideration I have pointed out a particular histopathological form of cells, which assume enormous proportions on account of elements which have the appearance of spores developing themselves in their body. I have shown some of these enormously swollen cells broken and small bodies scattered in the middle

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of the connective tissues. These bodies, it seems to me, are those described as coccidia or sporozoa, which having small appendages attach themselves to the tissues and reproduce the same cells. With the presence of these organisms by the mechanical irritation of the tissues, the enormous proliferation of the connective tissues and the destruction of the elastic fibers are explained. From the biological functions of these organisms a sphere of local infection is easily demonstrated, and the general infection from there is easily explained.

If an argument from analogy with plants could explain my idea, I would select the case of the ergoted maize, where the spores of the claviceps purpurea develop themselves in the soft grains, swelling them to enormous proportions. That the infectiousness of carcinoma comes from outside is easily demonstrated from the frequency of the skin cancer. The parts most often affected are the face and the hands, parts which are most subject to wounds and to excoriations. I had lately under treatment in my hospital practice three cases of cancer of the penis, which had found their origin in the phymotic condition of the prepuce. Holländer[16] and Henry H. Horton[17] concur in the same opinion that the cause of carcinoma penis is found in the irritation produced by the uncleanliness, resulting from phymosis.

The digestive tract from the lips to the rectum is subject to cancer, so much so that von Leyden[18] reported that 70 per cent. of all cases of cancer in Germany were found in the digestive organs.

It will be of no advantage to my argument to proceed in the study of the statistics, which have been given by Behla[19] and lately by Karl Kolb,[20] with admirable patience and accuracy. It appears that carcinoma more frequently affects those organs which are most exposed to irritation, to abrasions and subsequently to the entrance of infectious germs.

In the cases of carcinoma starting from a nævus, it is clearly seen that continuous irritation and often repeated abrasions act on the soft and protuberant mass of the nævus. Nævi seated in places where they are protected from injury are not affected by carcinomaa, but on the contrary nævi in regions exposed to irritations are often changed into carcinoma. Just lately I saw in my private practice an extended ulceration affecting the whole surface of a vascular nævus of the internal region of the thigh, in a baby four months old. The ulcerative condition was produced by the presence of urine, perspiration, etc., remaining on the tender surface of the nævus.

In conclusion, I would say that carcinoma frequently affects nævi

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not on account of the cells remaining in the structure of the nævus from the embryonic stage, but on account of the frequent bruises and irritation to which they are exposed, and their soft stroma, which easily reacts to irritation.

The name of nævo-carcinoma has for me only the meaning of a *carcinoma on a nævus,* but does not have any particular interest in reference to the origin of these growths. The pigment is only a coincidence in the nævus, and in consequence it is found in the carcinomatous stroma as such, and it does not produce nor increase the malignancy of the carcinoma.

Carcinoma from the nævus has the same origin from infectious germs as the other carcinomata, and like any other carcinoma is capable of producing general carcinomatous infection with a fatal end.

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DR. CHARLES WARRENNE ALLEN, of New York, read a paper, illustrated with lantern-slides, on

THE VALUE OF RADIOTHERAPY IN CUTANEOUS AND OTHER CANCERS

One of the most important and interesting questions connected with the subject of cancer is "What is the exact value of the new therapeutic measure so recently introduced, X-Radiation?" At this early date it is a most difficult question to answer.

Having had during the last year a somewhat varied experience with Radiotherapy, an account of my efforts and results should be as interesting as any topic which I might present for discussion at this time. Although much mystery has seemed to enshroud the whole question of the nature of Roentgen's Ray; how it is produced; what it is; and how it operates, the physical and mechanical features of the subject are in point of fact, extremely simple. Still the therapeutic use of the X-Rays remains largely empirical and consequently not wholly satisfactory. Various theories have been advanced to account for the phenomena of the Rays' production and their nature, as well as for the clinical effects which have until now been observed.

At the present day one theory may be as good as another to fit either proposition. It is known that when a vacuum tube is excited by a discharge of electricity, rays emanate from the kathode in straight lines. These kathode rays follow the general laws of reflection, so that if the kathode be made in the form of a concave mirror the point at which these rays will focus can be accurately determined. If at this point an object be interposed, the most brilliant fluorescence is produced, and a new form of ray, differing entirely from the kathode ray, emanates in every direction. This is the ray discovered by Roentgen and now exciting so much medical interest, especially from its therapeutic side. The nature of the phenomenon depends upon the degree of attenuation of the medium within the tube, and the nature of this medium. Thus, when a certain degree of vacuum is approached the various preceding phenomena, discovered principally by Crookes and Geissler, are observed to give way to the phenomenon now universally known by the designation X. Because of its significance from the clinical side, it is important to note that at the lowest degree of vacuum at which X-Rays can be shown to exist, the penetrating quality of the rays is at its lowest. As the degree of the vacuum is raised the penetrating power or the strength of the rays is raised. The ideal procedure would be to pro-

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duce a ray which would wholly penetrate the tissues to be operated upon—not stopping short on the one hand, not passing beyond on the other. Such, however, has never been, and in the nature of things, never will be accomplished.

As to the nature of the ray, the most plausible, or at any rate the least objectionable of the many theories advanced, is that molecules or ions, negatively charged, are projected through space in straight lines, and at an enormous velocity. These molecules penetrate the intermolecular spaces of the various substances, roughly speaking, in inverse proportion to the specific densities of the latter.

When the ray is applied to a pathologic process it is a chemical change which takes place in the tissues. This is the only conclusion which can be drawn from the fact that in the laboratory chemical action has been demonstrated to be the only phenomenon produced by the rays, as instanced in the experiment of passing the rays through solutions of various salts, and producing disintegration.

When the rays are applied to the normal skin, no subjective or objective evidence of action occurs unless for reasons connected with the tube or with the individual in the nature of idiosyncrasy, conditions simulating those of burn or tanning occur. When applied to morbid processes upon the surface, either no apparent action is noted, or we may get a charring of certain kinds of tissues, or a necrosis. It has been observed and demonstrated that with a low tube, the rays from which do not penetrate deeply, but are absorbed in the skin, the tendency to burn is greater, and in high tubes, whose rays pass through the tissues and are not absorbed, the tendency to burn is less. Just what occurs in tissues showing gross change has not yet been fully investigated, but in the case of a maker of tubes, for a time under my care, in which there was severe dermatitis of the arm resulting in atrophic and cicatricial changes, contractions, deformity and, strange as it may seem, carcinomatous degeneration, necessitating high amputation and wide excision of lymph nodes, the hystological pathology is now being worked out at my suggestion in our New York Post-Graduate Pathological Laboratory.

There would seem to be no question that, aside from the production of a burn-like dermatitis, the ray has a predilection for attacking tissues which are not highly vitalized and embryonic-like, or highly differentiated structures, or cell growths—so to speak—out of place. Epithelial overgrowth can be seen to melt away at times without undergoing the usual necrotic or ulcerative changes, and in their place

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healthy tissues are produced in such a manner as to lead to the belief that normal cell growth is stimulated. At times, indeed, the two processes can almost be observed to occur, pari passu, over limited areas.

If this new therapeutic measure consists in a bombardment of infinitesimal particles carried along Ethereal waves traveling at an enormous velocity, we can almost imagine them attacking the infinitely minute particles of matter which go to make up the cell nuclei, the cells themselves and the microscopic organisms which may possibly lie back of the faulty direction the cell growth has taken. The connective tissue cells would appear to be often unacted upon and being left behind, form what has been designated as a mat or basis-structure, through and about which the new growth, now no longer malignant, can take place.

Necrosis en bloc seems, at times, to be imitated, and the casting off process hastened, so that, with pronounced suppurative inflammation, rapid destruction takes place.

RECAPITULATION

Of forty-seven cancer cases treated ten were breast cases; one rectal; one uterine; one involving the glands and tissues of the neck; three were sarcoma, and one supposed to be sarcoma. This leaves thirty more or less dermatological cancer cases. Of these two involved the chin, being epithelioma, or cutaneous carcinoma; nine the nose or the nose and cheek; three were multiple (epitheliomatosus), one being in a subject of Xeroderma-Pigmentosum, whose eyes were likewise involved, one globe having been wholly destroyed and necessitating surgical enucleation; five were upon the cheek and near the eye; four were of the lip, and two of the arm. The results in these cases are as follows:

Ending fatally..... 5	Ceased treatment, improved... 3
Discharged, cured.....25	Ceased treatment, unimproved. 5
Improved and under treatment. 9	

CONCLUSIONS

1. The X-Ray possesses decided therapeutic power and may produce marked injurious effect.

2. From the study of the present series of cases, the writer is war-

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ranted in stating that the X-Ray as a therapeutic measure is not a passing fad to be dropped after a brief experience.

3. The effect of the method is at times to produce severe symptoms, referable to the heart, lungs, and other internal organs, and systemic effects pointing to absorption of products of disintegration thrown into the circulation more rapidly than they can be eliminated.

4. Metastases occur at times in grave forms of cancer more rapidly than we are accustomed to see in patients not so treated.

5. Cancer itself may be produced by the injurious effect of the ray in a person not known to be predisposed, as instanced in the case reported of the tubemaker, whose arm had to be amputated for carcinoma developing in the X-Ray cicatrix.

6. The X-Ray dermatitis, and many of the good effects as well, depend upon the proximity of the tube, the degree of vacuum and the degree of heating of the anode.

7. Tubes may at times get into a "burning state." This condition of tube must at present be learned by experience and observation with the individual tube, as there is nothing to indicate just when this condition is present, aside from the effects produced.

8. The method is not one to be solely relied upon in all cases of cancer.

9. In the nodular, wart-like and dry growths upon the skin, other means of removal, preferably by arsenical paste, should first be employed, and the rays then applied.

10. The indiscriminate application of the Ray to all forms of disease, as claimed to be practiced by advertising institutions and by charlatans, and the deceit practiced by calling other rays by this name, are apt to bring much unmerited reproach of a method really useful, whose effect is at times almost magical, but most often disappointing.

Dr. Joseph Zeisler, of Chicago, read a paper entitled

RADIOTHERAPEUTIC ORSERVATIONS

The employment of the mysterious X-Rays for the treatment of various skin diseases has ceased to be the monopoly of a few privileged promoters, and is gradually becoming almost indispensable in the work of the up-to-date dermatologist. Much has been learned in this new field of practical medicine. More remains to be accomplished before the new agent can be handled with scientific accuracy. At the present

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moment there is still a deplorable diversity of opinion concerning some vital points in the theory and practice of radiotherapy. The controversy as to the real active principle emanating from the Crookes' tube is apparently still unsettled. Freund and Kienboeck may be mentioned as important representatives of the two opposing factions. The former, after persistently attributing the bulk of the X-Ray effects to peculiar electrical discharges or waves from the tube, seems of late to somewhat recede from his position. Kienboeck, who regards the Roentgen rays as the efficient element, has a host of followers, among whom I am willing to be counted. It seems to me that comparisons with well-known effects of the Finsen light therapy and even with those of continued exposure to ordinary strong sunlight, make it more than plausible that the clinical manifestations following X-Ray exposure can be explained without giving to the electrical shocks coming from the tube more than a coincidental role. With all deference to certain experts in electricity I can therefore take little stock in their attempts to establish those clinical results upon the basis of electrolytic action.

TECHNIQUE

The whole question here alluded to has more than merely theoretic value. Inseparably coupled with it is the selection of the proper tube for our work, whether a hard or a soft one. Whoever is after the display of electric action will take a hard tube. He can get an abundance of electric waves out of it with a scarcity of rays. Accordingly the desired irritative or resolvent effects upon the skin will be slow in making their appearance. On the other hand the soft tube emits hardly a spark when in contact with our hand, but gives a light rich in Roentgen rays. Its clinical effects are prompt and energetic. These are established facts and admit of no discussion. Furthermore, it is generally admitted that the rays of a hard tube have a penetrating action and may easily cause far-reaching destruction, while the rays of the soft tube are absorbed by the upper layers of the skin.

Much of the success in X-Ray work depends upon the proper apparatus. The static machines are hardly fit for dermatological purposes. A good induction coil only is to be considered. My own installation has been put up by the well-known firm of Scheidel & Co., of Chicago, and has given perfect satisfaction. The direct street current is utilized, allowing a maximum of 150 volts. It is conducted into a wall plate containing volt meter and ampere meter, rheostat and speed regulator allowing up to 2,400 interruptions to the minute. From the

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wall plate the current is directed through a motor and into a rotary mercury-petroleum interruptor, and from there to the coil which is capable of a 12-inch spark. The latter is so constructed that of the three parallel spirals constituting the primary spool, one only, two or all three may be energized through a special system of switches. In this way all gradations from the softest barely noticeable light to a rich green one can be generated. Without resorting to the rheostat the voltage varies accordingly from about 65 to 85, while the amperage recorded shows in inverse proportion from 4 to 1½. I purposely mention these figures as quite different from other authors, for instance Schiff and Freund, who advocate a current of 12 volts, with an amperage of 1½ to 2. The fact of the matter is that while proper registrations of the intensity of the current are of interest, reference to them is of value only when the identical apparatus is used by another. The essential element in determining the energy with which we work is the character of the light irrespective of either voltage or amperage. There are some special photometric devices designed to ascertain the strength of the light, but they are little used and of minor value for practical work. To the beginner the frequent use of the fluoroscope will be of inestimable service, and Kienboeck's directions in this regard, and his sketches illustrating the shadow of the hand from tubes of varying degrees of vacuity were much appreciated by me.

Gradually one learns to judge the condition of the tube by mere inspection and by the aid of the ear. The intensity of the light is, however, only one of the factors constituting the desired dosage. The distance of the tube from the radiated surface and the time of exposure are of equal, if not more importance. The often-heard advice to use only the "softest light" must therefore be taken *cum grano salis*. If I place my tube with its strongest possible light at a proper distance, say 40 centimeters, I can use it safely for what might be called a mild exposure.

As to the tube itself, I would strongly recommend the use of self-regulating tubes after the pattern of the Müller tube. While much more expensive than the ordinary cheaper ones they have a great endurance, and I have repeatedly used them for more than one hundred strong exposures without exhausting them. Two principal methods of employing the rays may be mentioned. The one first advocated by Schiff and Freund and followed by Pusey is to use a soft light in short sittings in frequent, even daily intervals until a reaction sets in. This is surely a safe method, though rather slow, and in many cases, as for

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out of town patients, who come for an occasional treatment only, quite impracticable. The other plan, according to Kienboeck, is to give what he calls a normal exposure, i. e., the use of a powerful light for a period of about 20 minutes in a single sitting, after which an interval is allowed and the reaction is waited for. One such normal exposure will often be sufficient to produce the dehiscence of hair from the radiated area. This method requires a good deal of experience. I have followed it repeatedly and have never had any serious consequences. I have more often, however, taken a sort of middle of the roadway, and have used ten-minute exposures at intervals of a day or two to the number of from five to eight, when usually a decided reaction would take place. The proper method to be followed will depend to a large measure on the nature of the case and other circumstances, as I may mention later on. Whoever is making extensive use of the Roentgen rays is bound to have, sooner or later, some unpleasant experience with the much-dreaded X-Ray burns. This is due to the well-known observation that the effect of the radiations is cumulative and that the reaction, even after powerful exposures, requires eight to ten days to become at all noticeable and will then gradually reach its climax within the following week or two. Unfamiliarity with this important fact may lead the beginner to persist in continued strong exposures up to a point when damage cannot be undone. The three or four cases in which I produced a powerful reaction, consisting in acute dermatitis with oozing, crusting, etc., yielded readily to simple treatment within a week and caused little anxiety to either patients or myself, and left no permanent injury. I have never caused any sort of ulceration or sloughing. This may be explained from the fact that the light from the soft tube, which I have employed exclusively, has a rather superficial effect and does not penetrate into deeper tissues. Yet I feel that in the future even temporary dermatitis will easily be avoided by me and my remarks may serve to keep others from similar accidents, for the ideal way of using X-Rays in the majority of cases is surely to produce our results with the least possible irritation. In this connection a word about individual idiosyncrasy may not be amiss. Kienboeck believes that there is no such thing. Still the time required to produce a reaction surely varies in different patients, and particularly is there a notable difference in the resistance in various tissues. Pathological cell aggregations, for instance lupus nodules, will be influenced much more readily than normal skin.

The protection of such parts as are not to be exposed to the rays

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is an important point in the technique. I have used for this purpose thick sheet lead, which is easily moulded and cut into any desired shape, and had them lined with flannel. I would particularly warn against the careless exposure of the lips, which are most susceptible to irritation by the rays. In treating the face I always cover the eyes and the hair of the head.

During the six months from March first to September first, I have subjected 81 patients to radiographic treatment, as follows: Lupus vulgaris, one; lupus erythematosus, one; scrofuloderma (tuberculosis of the shoulder joint), one; hypertrichosis, eleven; sycosis, four; acne (all forms), thirty-four; epithelioma, nine; psoriasis, three; lichen planus hypertrophicus, two; dermatitis staphylogenes, one; eczema, four; keratosis palmaris, three; clavus, one; pruritus, one; hyperidrosis nasi, two; non-dermatological affections, three.

I shall in the following very briefly and summarily report my observations in these cases:

LUPUS VULGARIS

To the many cases of successful treatment of this affection by X-Rays recorded in literature, I am able to add one more, a typical instance of this disease. My patient, about 50 years old, has been affected by lupus of the face since his early childhood, and has ever since been under treatment of a more or less radical character. I have myself had him under my care for the past eight years with little more than temporary benefit, having employed the well recognized former modes of treatment, as cauterizations, curetting, dissection of the nodules, galvano-cautery, and the like. The affection consisted in multiple, dry, deep-seated gelatinous nodules, isolated, or forming small patches and practically covering the whole of the right cheek, extending over the bridge of the nose and encircling the lower eyelid, which as a result of surgical interference, undertaken in early childhood, and consisting in an unsuccessful transplantation of skin, has ever since been entirely everted. From the beginning of March to the end of July I made use of X-Ray exposures in this case, starting at first upon a small patch the size of a dollar. Seven ten-minute sittings during a period of about ten days caused a distinct superficial irritation which developed promptly into a shallow eroded surface showing small depressions in the place of the former nodules. With nosophen dressings the patch healed up within about a week, giving a smooth, slightly reddened scar. In this manner the principal locations of the trouble were

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gone over successively. During the latter part of the treatment the whole area, as far as possible, was subjected *in toto* to mild ray exposures, and the interesting observation could be made that an irritation would appear only where lupus tissue was still present, while the previously treated areas exhibited no sign of further irritation.

While I am not prepared to pass final judgment about the result in this case, I am able to say that the result of the treatment so far was in every way highly satisfactory and far superior to any other method known to me, except perhaps that of Finsen. The perfect painlessness of the treatment, the smoothness of the scars are particularly noteworthy.

LUPUS ERYTHEMATOSUS

A very characteristic and inveterate case of this affection in a woman, 56 years old, and covering almost the whole of the face, with isolated patches behind the ears, was treated by me with X-Rays during the two months, July and August. Three treatments a week for ten minutes with a strong light, at a distance of about fifteen centimeters, were given to one side of the face only, while the other was treated with resorcin lotion. After four weeks the improvement on the radiated side was very marked, the color of the patches becoming quite pale, and the desquamation being markedly diminished. A period of rest was allowed for this side, while the other half of the face was then likewise exposed with similarly good results. This case is still under my care.

SCROFULODERMA

A young man, 23 years old, came to me on the fifteenth of April with two large ulcers on the left upper arm, showing all the familiar characteristics of scrofuloderma. They distinctly connected with a tuberculous focus in or about the shoulder joint, and copious masses of thin, yellowish pus were discharged with each dressing from those ulcers. The patient was emaciated and had temperatures from 101 to 102. Radiations were given three to four times a week with a powerful light, at a distance of about ten centimeters, over the whole region of the shoulder and including the ulcerated surfaces. After only six exposures the discharge of pus became very scanty, and disappeared almost entirely within the next three weeks. At the end of five weeks' treatment the ulcers were healed up, with the exception of a small area the size of about a pea, when the patient desired to be temporarily dismissed in order to go to his distant home. I have quite recently seen

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him again, and found him in every way much improved; the pain in the shoulder joint almost entirely gone, the mobility much improved, the weight of the patient increased by twenty-three pounds, absolutely no temperature, and the former ulcerations entirely healed up. There was, however, a small new abscess formation on the posterior part of the shoulder, on account of which the radiations were resumed.

HYPERTRICHOSIS

I have often heard the remark from colleagues engaged in this line of work that they consider the treatment of hypertrichosis by Roentgen rays as a very delicate and uncertain affair. One of them, in answer to my direct question, once mentioned that he had given over seventy exposures to a woman thus afflicted. My own experience in the eleven cases thus treated have made me rather optimistic concerning what can be accomplished here. I have invariably made use of what has been before referred to as normal exposures, and have found that three to five such exposures, given at intervals of a week or two, will produce complete epilation. As several of my patients were living out of town and could come for a treatment only at long intervals, this method was the only one to be selected. The reaction consisted, as a rule, in marked pigmentation and temporary erythema which yielded gradually. My patients have all been instructed that the epilation following one series of treatments is not to be considered as permanent, but that radiations should be resumed at intervals of, at first, two months, and later on longer periods without waiting for a return of the hair.

Whoever has had much experience in the electrolytic destruction of superfluous hairs will be bound to consider this new method a veritable boon to both operator and patient. One lady, with a very extensive growth all over the chin and somewhat on the cheeks, and who had formerly received many electrolytic sittings at my hands, remarked to me, after her third X-Ray treatment, when all the hair from the radiated surface had fallen out, that she would never under any circumstances again submit to the electric needle.

As regards the final effect upon the skin, I have been unable in my cases to verify Ehrmann's observation of an atrophy of the skin following this treatment.

SYCOSIS

Of the four cases of sycosis which I have treated, two were very severe and inveterate. In one case it had affected the whole chin for a

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period of two years; in the other the lip had been the seat of the trouble for more than four years. The cases were both of the coccogenic variety and showed multiple follicular miliary abscesses. The treatment required was seven exposures for the one, and eight for the other. The exposures were given at a close distance for ten minutes daily. The result of the treatment surpassed my most sanguine expectations. After two or three radiations pustules ceased to form. The reaction produced was very moderate. Defluvium commenced about two weeks after the beginning of the treatment and with it all inflammatory phenomena disappeared completely. The skin looked entirely normal, except slightly pigmented and reddened. These cases have since remained under my continued observation. About two months after epilation had become complete, new hair began to show and has since grown out all over the affected areas. In spite of this there is so far no sign of relapse. Absolutely no other treatment had been given in these cases.

ACNE

The thirty-four cases mentioned above comprise several varieties and all degrees of severity of acne. Five of them were instances of acne rosacea; one belonged to the type of acne necrotisans; four cases were indurated and pustular acne of the back and shoulders. The bulk of them were of course of the ordinary type of acne of the face, many of them of the very severest and most rebellious nature. It would entirely surpass the intention of this communication to go into details of all these cases. I would only remark in general that their management differed considerably from that employed in the previously named affections, in that the exposures were rather mild in character, the distance of the tube, according to its light, being from twenty to forty centimeters.

My plan in these cases is usually to start in with three treatments a week for from two to three weeks. After this, exposures are given twice weekly only for a time, and later on about once a week. A beneficial action can usually be noticed during the second week, when few new pustules are noted and the comedones seem to shrink and dry up. The accompanying seborrhœa oleosa of the face is very promptly influenced. Some of the severest cases which I have ever treated were cured in from four to six weeks and have so far remained well.

If I think of the many years of hard and persistent work which I have formerly given these cases in the way of local treatment, consisting in the opening of abscesses, the removal of comedones, curet-

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ting, caustic applications and the like, with but fair results, and compare with that my present management of these cases and its almost uniformly excellent therapeutic effects, I can only regret that Roentgen's wonderful discovery was not made twenty-five years ago.

I am not prepared to draw final conclusions from my observations as to the etiological nature of acne, but my long-held belief, that constitutional causes are foremost in its production, has now become considerably modified.

EPITHELIOMA

From all appearances the use of X-Rays for the eradication of epithelioma means a remarkable progress in this department of surgery. My own observations in nine cases of this kind are certainly such as to make me rather enthusiastic in this respect. My cases were all of the superficial variety. As to location, three were situated on the side of the nose, one on the lower lip, one on the lower eyelid, one near the tip of the tongue, one on the glans penis, one of the back of the hand, and one on the forehead. Three of them were relapsing forms and had been previously treated by me by curetting and cauterization. In these latter cases the diagnosis had been established previously by microscopical examination. In the others this additional help to the diagnosis was considered undesirable, as a removal of tissue would be contrary to the conservative plan of radiotherapy. The treatments were given with a strong light, the distance of the tube being from five to ten centimeters, the sittings being ten minutes, repeated at daily intervals for a time, and then only every two or three days. The case of epithelioma of the lower lip was demonstrated before my class at the Northwestern University before the beginning of the treatment, and afterwards, when cured. It required ten treatments during a period of four weeks. The one on the tongue yielded to twelve exposures given during three weeks. In only one case was there produced a reaction amounting to severe dermatitis. In most of them the exposures were interrupted at the first sign of a slight irritation and further results waited for. In all of them, I am happy to record, at least for the time being, a recovery.

A comparison of this method with all others known, both by surgical means and by caustics, must necessarily establish a vast superiority of radiotherapy, not only as regards its absolute painlessness, but also as regards the condition of the scars. Whether the results attained in my own cases and in the many reported by Pusey and others will

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prove permanent, remains to be seen; but to my mind the elective and deep reaching action of the rays seems more radical than any surgical interference possibly could be.

PSORIASIS

The three cases of this affection were selected with regard to special location of the disease. They were cases in which a few regions only were invaded by particularly stubborn manifestations; in one of them the knees only, in another the arm, showing a large infiltrated scaly patch; in a third the lower limbs were exposed to the rays. Exposures were made with a mild light at a distance of from fifteen to twenty centimeters, in order to take in the whole affected area. Results were noticeable after from eight to ten exposures, and were on the whole satisfactory. In one of them the benefit has lasted for more than four months. We know from other observations recorded in literature, that beneficial results by X-Rays in psoriasis are, however, not to be considered as permanent.

LICHEN PLANUS

Similar results were obtained in two cases of lichen planus hypertrophicus located over the tibial region. One such patch, which had obstinately resisted various plans of treatment, even as energetic as thorough curetting, disappeared in an almost marvelous way after four strong exposures, given at intervals of five days each, and left the skin in a perfectly normal condition.

ECZEMA

I have made use of X-Rays only for isolated, chronic, infiltrated patches of eczema and my results seem to me very encouraging.

KERATOSIS PALMARIS

I am sure that most dermatologists will agree with me concerning the great difficulty of successfully treating this condition. My own experience, at least, has always been very disappointing. The three cases of this affection which I submitted to radiotherapy were inveterate forms and covered in one instance the palmar surface of both hands, including the fingers, and in the other two circumscribed patches of the size of a dollar on each palm. The effect of the rays in these cases was, to say the least, surprising. One case seemed perfectly restored after five strong exposures.

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CLAVUS

About the middle of July I was visited by a young gentleman, 23 years old, who complained that for the past two years his life had been made perfectly miserable by the presence of numerous soft corns on the soles of his feet. The affection was symmetrical and consisted in upward of sixty soft corns distributed over the plantar surfaces of all the toes and the adjacent regions of the sole. While a single corn may be a trivial affection, a trouble like this one surely deserves the earnest attention of the dermatologist. I learned from my patient that all sorts of treatments, including excision, keratolytic ointments, special pads, etc., had been tried in vain, and I therefore resorted at once, as an experiment, to the use of X-Ray exposures. I gave twelve daily exposures with a strong light, at a distance of ten centimeters, for ten minutes each. No visible reaction resulted, but the treatments had to be discontinued, as I left for my vacation. Three weeks later, when I returned, my patient exhibited his feet to me, and to my great delight he was absolutely and perfectly free from all his corns and has remained so to this day.

PRURITUS

One case of pruritus genitalis was much benefited by three mild exposures.

HYPERIDROSIS NASI

Two cases of this kind were subjected to radiotherapy, with the expectation that the rays would assist in limiting the excessive oiliness in analogy to their action in acne. Ten mild radiations were given in one of these cases at intervals of from three to four days, and the result as regards the size of the follicles and the secretion was satisfactory.

DERMATITIS STAPHYLOGENES

This was a remarkable case of an inflammatory affection covering the back of the right hand, consisting of an eruption of multiple pustules, weeping, and the other signs of an acute dermatitis. This condition seemed to me to be secondary to previous energetic treatment by the home physician, Dr. Sauerhering, of Wausau, Wisconsin, consisting in electrocautery for a trouble, the nature of which I could only guess, but in regard to which I had microscopical findings by Professor Zeit, of Northwestern University, who declared that there was nothing malignant present, at any rate, no tuberculosis. As the condition had

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rebelliously resisted continued treatment in various ways before, I decided to employ X-Ray exposures. These were given with a strong light at a distance of about ten centimeters for ten consecutive days, when there was a decided erythema surrounding the affected patch. The pustules, however, had ceased making their appearance after the first few treatments, and the oozing had become considerably lessened. The patient was very anxious to leave for his home, but reported to me two weeks later that his hand was perfectly cured.

Of non-dermatological affections, I have used the rays in two cases of acute epididymitis, but was unable to say whether they helped the progress of the cases very much. In a case of hip-joint disease, in which I was asked to administer the rays, the effect in alleviating pain was very noticeable.

Were I to attempt an explanation of the beneficial action of the X-Rays in all these cases, I would surely side with those who deny any particular effect upon micro-organisms, but who, basing their opinion upon microscopical evidence, attribute to the rays a special affinity for pathological cell formations, which under the influence of the rays undergo metabolic changes and even entire disintegration.

In conclusion, I can only say that my experience with radiotherapy so far has made me an ardent advocate of it, and I believe that until it is replaced by something still more marvelous it will constitute one of the most effective weapons in our fight against a large class of dermatological affections.

DISCUSSION

DR. ALLEN.—Having used the static mechine almost exclusively in many of my cases, and with often absolutely satisfactory results, I cannot quite admit the statement made by Dr. Zeisler that the static machine does not do the work. I have also used the coil both in my office and in several patients' residences with equally gratifying success.

DR. A. R. ROBINSON.—In the line of Dr. Allen's paper I would like to report a case of xeroderma pigmentosum in a child five years of age. There were about fifteen cancerous lesions, two of them as large as a walnut, on the face. One covered the whole of the upper eyelid. The child was put on thyroid extract, and in four months time all but two of the lesions had disappeared and there was less pigmentation and angiomatous condition of the neck and forearms. Finally, but one large lesion remained, and three months ago I began to use the X-ray on that. The exposures were made very carefully, only once a week, but caused a marked dermatitis. I failed to see a

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particle of improvement in the cancer nodule. Perhaps the age of the patient makes some difference in these cases.

In regard to the cases of cancer of the breast reported by Dr. Allen I would mention that Johnson and Merrill recently reported seven cases, all of which failed to show any improvement, although my own cases were decidedly benefited. Some cases of mammary cancer show no improvement.

In regard to the treatment of sycosis by means of the X-ray, the trouble is that there is some danger of producing a permanent alopecia. I have in mind such a case, where, after two treatments of the back of the head, the hairs all fell out and the sycosis on the face did not improve. Six months later the treatment was successful.

Dr. Allen has already replied to Dr. Zeisler's view regarding the use of the static machine for X-ray work. Dr. Williams and others say that one is just as good as the other. It was recommended to me by Dr. Piffard, and I have used it exclusively with satisfaction.

In regard to the treatment of epithelioma, I fail to see why you should take three or four months time in treating a case with the X-ray and perhaps produce an alopecia of the face, when you can usually cure the case at a single sitting by the older methods, especially by caustics. In certain cases, where the epithelioma is near the eye or in the region of the blood-vessels in the neck, the use of the X-ray is advisable, but I have read the report of every case of cutaneous cancer that has been publishd as cured, both in Europe and in this country, and I must say that at least 75 or 80 per cent. could be cured much quicker by caustics. I recall one case of very superficial epithelioma of the lip, which had been treated every day for two months by the X-ray without any effect, by a skilled operator, and which I cured in two minutes by an application of caustic potash. I do not think the X-rays reliable in a cutaneous epithelioma arising from the prickle layer of the rete. In rodent ulcer they are evidently efficient.

Dr. William T. Corlett.—I agree in toto with what Dr. Zeisler has said, and his experience is in perfect accord with my own. Two years ago I found out that my attempts at X-ray work frequently resulted in failure because I did not get the right sort of tube. I then used the ordinary hard tube, and with it my work resulted in failure almost in every instance. One of the cases was a woman with lupus erythematosus, which was treated about two years ago with the X-rays, but without benefit. Since then I have treated the same patient, using a soft tube, and have practically cured her. I would also like to mention a case of sycosis that resisted all forms of treatment for two years and is now nearly cured by means of the X-ray. A case of epithelioma, so pronounced by the pathologist of Lakeside Hospital, was cured by six applications—the shortest course of treatment I have seen. A case of rodent ulcer in which a fatal result was imminent has been under the X-ray treatment for several months and is now slowly improving.

I think patients residing out of town, and who have not made preparations to stay for a protracted course of treatment, should be given a test exposure at the time of their first visit. In this way the possible idiosyncrasy to the action of the rays that has been referred to may be discovered. I usually give

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an initial exposure of ten minutes and instruct the patient to return in a fortnight. I have never had a severe burn in my own experience, but have seen a very severe and obstinate X-Ray burn in examining a fractured bone.

DR. WILLIAM A. PUSEY, Chicago.—I wish to call attention to one small historical inaccuracy in Dr. Zeisler's article, and that is his reference to the theory that the effects of X-rays are due to the actinic properties of the rays. as Kienboeck's theory. That theory was announced and experimentally proved by Professor Elihu Thompson, long before Kienboeck ever suggested it. Kienboeck is only one of many adherents of that theory and is in no way entitled to such prominence in connection with it as would be suggested by calling it Kienboeck's theory.

As to Dr. Zeisler's technique, I have not the slightest doubt that with it he gets results that are excellent, but I think that he is suggesting a method against which a warning must be offered. He is following Kienboeck's technique, based upon the postulate laid down by Kienboeck, that there is no such thing as idiosyncrasy to X-rays, and Kienboeck is practically the only writer who takes such a position. Any man who has done much work with X-rays cannot but be struck by the marked difference in susceptibility of individuals, a difference that at times amounts to idiosyncrasy. There is not the slightest doubt that hairs may be removed from the chin or scalp or anywhere else by a single exposure, but I am sure that the man who undertakes to do this is running the risk of disaster. I have seen a number of X-ray burns of severe type produced by what are considered by some workers safe exposures for therapeutic purposes.

As to the kind of tubes to be used, to which attention has been called, that is largely a matter of choice for different diseases. The whole point is to obtain a sufficient reaction for the purposes of the case in hand, without getting a dangerous reaction. Such a reaction can be produced with a hard tube or a soft one, and a severe burn may be produced with either. Kienboeck's suggestion that a soft tube is not dangerous, because the rays from it do not penetrate deeply, is of no importance in this connection, for the rays from such a tube do penetrate to the depth of half an inch or more, and a necrosis of even one-fourth inch might well be dreaded in some cases. As to the kind of apparatus, there is no question that X-rays can be gotten from a coil or a static machine or a Tesla apparatus—in fact, from any apparatus that will give you a current of high enough potential; but there is ground for choice as to convenience and other factors, between forms of apparatus, and, like Dr. Zeisler, I much prefer the use of induction coil.

DR. STELWAGON.—It seems to me it is in cases of rodent ulcer about the eye, to which Dr. Robinson referred, that the use of the X-ray is particularly valuable. In other and more accessible regions I am inclined to favor the method of using a caustic application and then supplementing this by the X-ray as the part begins to heal.

As regards the choice of apparatus, I have used the static battery in my office, and I know others have used it with very satisfactory results. The only disadvantage connected with it is that it cannot always be relied upon, as it

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does not work satisfactorily in certain kinds of weather. In connection with my hospital and dispensary services the coil has been employed.

DR. J. C. WHITE.—I wish to put on record a case of carcinoma of the skin developing at the site of a prolonged X-ray dermatitis.

Although the X-ray may produce a loss of hair, it is capable as well of setting up a hypertrichosis. I have in mind a woman who was exposed to the action of the rays for some lesion on the temple, which was cured, but subsequently the hairs in that region were completely lost. Later on, the hairs grew again in the denuded area, and this was accompanied by a hypertrichosis involving the upper third of the corresponding cheek.

I hope that some of my Boston colleagues who are present here, and who have had sufficient experience with this method of treatment, will say something about the action of the rays in various types of skin diseases.

DR. S. SHERWELL.—I was very glad to hear the remarks made by Dr. Robinson and the conclusions of Dr. Allen. I regarded the latter as more of an enthusiast in regard to this method of treatment than seems to be the case. While we are all willing to utilize the rays to the fullest extent that is warranted, still I am inclined to agree with Dr. Robinson that the older methods of treatment are preferable in many instances. I have used the acid nitrate of mercury in hundreds of cases of epithelioma, with entire satisfaction, both to the patients and myself. Only a few days ago I operated on an elderly lady by this method, first curetting the lesion and then applying the acid nitrate of mercury. In these cases I expect the cure to be permanent, and it usually is. The treatment is somewhat painful, but not very, and can usually be relieved by ordinary means. I use cocaine sometimes before curetting, though more frequently afterward, before applying the acid, and find the pain but seldom complained of.

I appreciate the value of the X-ray, and have seen some inoperable cases of cancer of the orbit wonderfully helped by it. I do not, however, think that it should entirely supplant the more radical methods in certain cases.

DR. RAVOGLI.—I think the name of X-ray is very appropriate, because I find it very difficult to explain the action of the rays on the tissues. I recall the case of a man who entered the City Hospital with an extensive epithelioma involving the calf of the leg. An examination was made by the pathologist of the hospital, who reported the case as one of cancer. My colleague, who was then on duty, applied the Vienna paste, producing an extensive burn, followed by apparent improvement, but when I returned to the service I found that the growth had recurred. I advised amputation, but before consenting to this, the patient asked to have the X-ray tried. After about twenty exposures I was obliged to stop the treatment on account of a dermatitis which had become exceedingly annoying. At this time the appearance of the malignant growth had entirely changed. Healthy granulations were forming and there were evidences of cicatrization. We have every hope now of ultimate recovery. In addition to the skin lesion in this case, the sub-crural ganglion was extremely swollen, and after the application of the X-ray the glands became reduced in

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size. Since carrying out this treatment I have examined sections of the tissues microscopically, and can no longer find any evidences of cancer.

DR. F. H. MONTGOMERY.—There is no doubt that superficial forms of carcinoma disappear under radio-therapy, and that the resulting scars are less conspicuous than those obtained by other methods. For the diffuse and generalized forms there is no other treatment equal to it. For the localized superficial lesions there is no reason why the knife or caustic should not be employed, though there is an element of safety in supplementing this treatment with the X-rays.

In the treatment of deeper-seated carcinoma by this method, it is reasonable to suppose that by producing an inflammation in these tumors we may encourage dissemination of the cancer cells into the surrounding tissues. This is a danger that should be considered, and we have seen illustrations of it. In several cases under the observation of Dr. Hyde, Dr. Ormsby and myself, where quite a reaction was produced by the rays, the treatment was followed (after subsidence of the reaction) by a rapid development of the growth—much more rapid than is observed in unmolested carcinoma. In at least two cases we have seen metastases occur during the gradual disappearance of the original growth under treatment.

In tuberculosis the X-ray treatment is very satisfactory. In lupus erythematosus it is less so, but in the original or modified Finsen light we have a safe and frequently successful method of treating this affection. In five or six of the cases Dr. Hyde and I have submitted to this treatment, the lesions have entirely disappeared. Two of them were first subjected to radio-therapy without marked improvement.

DR. D. W. MONTGOMERY.—In regard to the statement made by Dr. Robinson favoring the use of the curette or caustic in epithelioma, I would like to say that I have never seen such beautiful scars by any method of treating superficial epithelioma as I get with the X-rays. It is almost imperceptible, and I think this is a very desirable factor in lesions on the face.

DR. ALLEN.—I agree with the statement of Dr. Montgomery regarding the slight degree of scarring that remains after the treatment of epithelioma with the X-rays; in fact, the rays will remove scar tissue itself, as I have witnessed in several instances.

DR. ZEISLER.—This subject will not be settled here today, and I have very little to say in closing. I beg to apologize to the Eastern gentlemen for having made the remark I did about the static machines. I was in hopes that Dr. Pusey might say something about the superiority of the coils over the static machine.

DR. PUSEY.—I think that static machines are much inferior to coils.

DR. ZEISLER.—In reply to Dr. Robinson as regards the danger of producing a permanent alopecia by treating sycosis with the X-rays, I can only quote from my paper that in the cases treated by me in that manner the hairs

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returned within two months. In hypertrichosis the hairs also return. In fact, it is very difficult to make epilation permanent.

In reply to the criticisms made by Dr. Pusey, I would say that I did not care to go carefully into the literature of the subject. I referred to Freund and to Kienboeck as representing the two factions in regard to the selection of either hard or soft tubes, and in following the latter authority I was backed up by a man whose results I had seen, who never had any injurious effects from his method of treatment, and whose name has become a household word among the German radio-therapeutists. I have often given exposures of twenty minutes each, and have never seen any damage result therefrom. If I should undertake to remove hair from a lady's face by seventy, or eighty, or ninety exposures, the treatment would prove too laborious for me and, I am afraid, too expensive for the patient. If, however, I can tell her that I can remove the hair in three or four treatments, it places the method within her reach.

As regards the statement made by Dr. Robinson favoring the knife or caustic in treating epithelioma, I would say that the majority of patients will always select a treatment which means no cutting or burning. I would rather go to Dr. Pusey for six months and be treated with the X-rays than have myself curetted or cut or burned.

DR. JAMES MCFARLANE WINFIELD, of New York, presented a paper entitled

DERMATOSES OF THE INSANE. A REPORT OF AN EXAMINATION OF THE PATIENTS OF THE LONG ISLAND STATE HOSPITAL FOR THE INSANE

That the insane might be subjects of skin disorders, especially those of neurotic origin, is a natural assumption.

For some time it had been my desire to make investigations to determine whether the mentally unsound were more or less afflicted with dermatological diseases than those in full possession of their mental faculties.

During the past year I have been able to make the necessary examination, and with your kind permission will read the results.

In writing the paper for presentation before this Association it was difficult to arrange and condense the data for easy reference; knowing how extremely tiresome and confusing a mass of statistics are when embodied in a paper, I have prepared a reference table leaving the paper to emphasize only the important and interesting cases.

There are over twelve hundred patients in the institution, but only one thousand and eighty-four were examined, for many were in a highly excited state, and others were variously employed about the buildings.

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The ages of the patients ranged from 15 to 81 years; some had been insane for over thirty years, and had been inmates of this asylum for more than twenty years. Many of the others were recent admissions. They were natives of all parts of the world, the majority being from the United States and Ireland.

Following the custom of the state institutions, the nativity and not the nationality of the patient is given, as, for instance, it will be seen, in the table, that one was from Japan, he was not a Japanese, but of English parentage.

The classification of the mental disease is the same as that on the admission card.

In comparing the actual number of patients examined (one thousand and eighty-four) with the tabulated total (one thousand one hundred and seven) there is a difference of twenty-three. The reason for this is that some patients had two or three distinct skin diseases, as, for instance, atrophia cutis was often associated with hypertrichosis, etc.

In making the examinations nothing that was not clinically evident was noted, no reliance being placed on the histories given by the patients.

The skin affections were distributed among the various forms of insanity as follows. As nearly half of the patients examined were terminal dements therefore the greatest number of dermatological disorders were found in this class. Among them there were fifty-seven cases of true skin disease, and one hundred and one of degenerative dermatoses. Out of the acute and chronic melancholics twenty-two had distinct skin affections, and sixty-nine were degenerations. Of the acute and chronic maniacs, fifteen had some form of skin disease, and thirty-eight cutaneous degenerations. Fifteen of the paranoiacs had skin disease, and twenty-nine showed evidences of degenerations. In the paretics ten had skin disease, twelve degenerations. Thirteen cases of skin disease were found among the epileptics while seven were examples of degenerative dermatoses.

The imbeciles, idiots, patients with primary, secondary, recurrent, were nearly negative regarding any skin disease or defect, there being only six instances of true skin disease, and but ten examples of degeneration out of forty-eight patients.

Of the eleven cases of eczema, three were occupational, the women were employed in the kitchen. As a rule the acne eruption was situated on the back and shoulders.

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In the eight epileptics the acne was undoubtedly due to the drugs employed to control the seizures.

It was impossible to trace the origin of the solitary case of scabies, the patient had been an inmate of the institution for many years.

Of the twenty-four cases of seborrhœa, thirteen involved the scalp, ten were on the chest and back, and one was axillary.

The epithelioma were all facial. A rather interesting feature was that all of the patients suffering from epithelioma were under forty years of age.

Although syphilis is a recognized factor in certain forms of insanity, it was found only seventeen times in this institution; this at first is rather surprising, but it must be remembered that only cases showing actual evidences of the disease were noted, a number of other patients had suspicious signs, but for lack of corroboration they were not included in the report.

It will be seen, however, that nearly 50 per cent of the syphilitics were paretics; the rest were distributed among the terminal dements, melancholics, and primary monomaniacs (paranoia).

There was only one case of secondary syphilis, this was in a patient suffering from acute melancholia.

All but one of the cases of seborrhoic warts occurred in patients over fifty years of age; the exception was in a woman not quite forty. In one patient the warts were scattered over the back, all the rest were facial.

The case of Paget's disease occurred in a female epileptic, the dermatitis presented all the clinical characteristics of this disease, but unfortunately confirmatory microscopical evidences are lacking.

The case of sarcoma cutis is interesting because of its rapid growth. The patient was a German woman aged 77; she had been an inmate of the asylum for over nineteen years. April, 1902, I discovered a hard tumor one and one-half by three inches in size situated deep in the skin of the abdomen just under the left mammary gland; the skin over the growth was glossy and of a dark bluish color. The right nipple and part of the mammary gland had been removed presumably for cancer some time previous to her admission to this institution (at least twenty years ago). No tumors could be felt in the remaining portion of the gland nor in the other mamma.

The patient was again seen August 1, 1902; the growth had rapidly increased; it now involved nearly all of the skin of the abdomen, chest, arms, and a part of the back. The forearms and hands were greatly

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swollen from pressure upon the superficial vessels. The growth seemed to be only cutaneous, the skin was greatly thickened, hard, bluish and glossy. Scattered over the affected area were a number of various-sized dark red tumors, some of them suggestive of the growths seen in mycosis fungoides.

Both of the cases of favus were of long standing and occurred in foreigners; one was a German and the other a Russian Pole; they had this skin affection when they were admitted to the asylum where they had been for a number of years. It speaks well for the care these patients received that there had never been another case contracted from them.

The above are the examples of true skin disease worthy of mention, the other cases of interest were among the degenerations.

All of the recent treatises on mental diseases devote considerable space to the so-called stigmata of degeneration. The stigmata shown by the skin are either congenital defects or growths and changes that denote some degenerative process that would naturally occur late in life due to the degenerations of senility.

The alienists classify under the cutaneous stigmata the following: fibroma, angioma, ichthyosis, nævus unis lateralis, atrophia cutis, telangictasis, hypertrichosis, pruritus, moles keratosis, pilaris, leucoderma, pigmentations, vascular nævus, and patches of greyness.

Of the one thousand and eighty-four cases examined two hundred and ninety-six had one or more of these atrophic or hypertrophic dermatoses. The most common degeneration was atrophia cutis, of which there were eighty-nine cases. The degrees of atrophy varied from a mild keratosis to a marked general wasting of the skin. No case of atrophy in a patient over 45 years of age was noted.

One severe example of universal cutaneous atrophy was seen in a girl only 22 years old.

In one terminal dement the skin of the trunk and limbs appeared perfectly normal, but that of the face was atrophied to a marked degree. Ten patients, four epileptics, three paranoiacs, and three terminal dements, had those minute atrophic spots about the hair follicles which has been described by Browning (Journal of Nervous and Mental Diseases, Sept., 1896). From a study of these ten cases I am inclined to think that if they are not actually minute examples of atrophoderma striatum et maculatum, they are at least closely related thereto.

Hypertrichosis is a stigma upon which considerable stress is placed. All but eight of the cases here tabulated occurred in females. The

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eight men had thin and coarse beards, but their bodies were thickly covered with hair, especially marked over the spine. Twenty of the women had a copious growth of thick stiff hairs on their lips and chins. Most of the others had an unusually thick fuzz all over their faces; all of them, however, had an abnormal amount of coarse hair over their bodies, thickest on the chest and back.

One case illustrates how the mental condition seems to influence the growth of the hair; inasmuch as this appears to be a unique case a full history will be given.

The subject was a German girl aged 24. Late in 1900 she had been admitted to the asylum suffering from an attack of acute melancholia; after six months she was discharged. Dr. Warren, who had charge of her, stated that while she was profoundly melancholic there seemed to be an increased growth of hair all over the body, especially marked on the face. She was readmitted in January, 1902, suffering from a relapse. Examination at that time did not reveal anything especially abnormal regarding the hair, except, perhaps, that she was a little more hairy than most females of her age.

Her mental condition gradually grew worse until she went into profound melancholia. It was then noticed that the lanugo hairs all over the body were becoming thicker and stiffer; this change was most marked on the face; it rapidly became covered with a growth of fine blond hair, some were one-fourth to one-fifth of an inch in length. Her appearance at that time suggested a mild type of the "Russian dog-faced boy."

After three months her mental condition slowly improved; simultaneously the superfluous hairs began to drop out, and on August 1 her face and body were as free from hair as when I first saw her.

Telangiectasis, especially the papillary varices, is also recognized as a stigma.

At the beginning of the examinations I thought that this vascular defect certainly was more prevalent among the insane than in those having all their mental faculties. As the examination advanced it was found that this capillary condition was more prevalent among the males, only one-fourth of the tabulated cases being females.

This difference between the sexes is easily accounted for by the more severe manual labor of the males.

Wishing to positively determine if mentally sound men and women in a similar station of life were subject to this capillary degeneration, I had Dr. Woolsey examine a corresponding number of patients at the Kings County Hospital. Their ages, occupations, social condition and

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nationality were about the same as those in the asylum. Out of the three hundred and fifty cases that he examined, the doctor found the proportion—that is, one-fourth females to three-fourths males—was about the same as those in the state hospital.

Concluding from these observations, telangectasis cannot be classed as a stigma, or even a condition at all dependent upon insanity. Anyone whose habits or occupations subject the capillaries to strain will be apt to have more or less of these vascular defects after middle life.

The fibroma were generally multiple, of the flat variety, only one instance of the pedunculated was seen. This point is emphasized because it is claimed that the pedunculated variety is the kind most frequently found in the insane.

One interesting case of fibroma was observed in a man who had a band of tumors two by four inches in extent situated in the left lumbar region; the growths were from a millet seed to a large pea in size, hard and firm to the touch, deeply situated in the skin.

One of them was excised and examined microscopically; it appeared to be a simple fibroma.

In the case of nævus unis lateralis the wart-like growth were situated on the right arm and back; a line about an inch wide began about mid-way between the elbow and the axilla, extending upward and crossing the axilla, curved backward along the lower border of the scapula, covering in length about twelve inches.

Only four out of the fifteen cases of moles were of the hairy variety; two were placque-like, the rest were the ordinary pigmented mole. This point is mentioned because the hairy mole, especially the large patches, is claimed to be the most frequently found among the stigmata of degeneration.

The case of pigmented skin closely resembled the discoloration produced by chronic arsenical poisoning.

Besides the diseases and defects tabulated, there were two cases of othæmatoma, two of enlarged thyroid, one enlarged unilaterally, one of whitlow, and one peculiar instance of capillary dilatation, all of the cutaneous capillaries of the back were hypertrophied giving the appearance of a fine net-work in the skin.

Two other patients had tubercular glands.

Many of the writers on insanity, especially the older ones, lay considerable stress upon the oily and greasy skins of the melancholics; they also speak of a characteristic odor of insanity. Except in patients suffering from seborrhoes I failed to see that the skin of the insane was any more oily than that of those who were not mentally affected.

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As for the disagreeable cutaneous exhalations, it is doubtful that any one would be able to detect any unusual smell in our modern hospitals for the insane, except, perhaps, in the wards for epileptics and melancholics. The patients in these institutions are obliged to bathe at frequent intervals, and a careful surveillance is kept over their personal habits.

The conclusions of this paper might properly be introduced by the following questions: Was not this examination a great amount of work for a very little gain? And could not the results have been forecast from the beginning? No systematic examination is ever worthless from a clinical standpoint, still more is this true in a field that has not been previously covered. Moreover, certain relatively positive results can be arrived at for this examination has conclusively proven; that the skin shows less tendency to disease when people are obliged to live regular and well ordered lives. In over a thousand insane patients, nearly all of whom were from the lower walks of life, there were only one hundred and forty-six examples of true skin disease, and some of this number were from external causes, or had been contracted before entering the institution. It has also emphasized the fact that the insane are more subject to degenerative dermatoses than those mentally sound. It is further evident that many of the statements of the alienists so often quoted and reiterated regarding the cutaneous stigmata are entirely wrong, doubtless because founded on insufficient basis. We need but to refer, as an example, to their remarks regarding telangiectasis and moles, their conclusions were not borne out by this investigation.

The statements regarding the distinctive odor of the insane should be eliminated from the text-books on insanity, when that could have been truthfully written the public insane asylums were conducted upon an entirely different plan, and the dirty, oily, ill-smelling patients were so because they were not cared for in the humane and hygienic manner in which they are at present.

In closing, I wish to express my appreciation for the courtesy shown me by Dr. Robert M. Elliott, superintendent of the Long Island State Hospital.

I also wish to thank Drs. Tracy and Warren, and the hospital staff for valuable assistance and data.

To my clinical assistant, Dr. William C. Woolsey, I am greatly indebted for his kindness in assisting at the actual examinations, and also for making the comparative investigations at the Kings County Hospital.

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Number of Patients Examined: Females, 723. Males, 361. Total, 1,084.

Ages by Decades....	10–20	20–30	30–40	40–50	50–60	60–70	70–80	80–90	Unknown.	Total.
	9	137	279	240	214	127	39	5	34	1,084

Nativity: United States, 515; Ireland, 327; England, 41; Scotland 14; Wales, 2; Germany, 115; Austria, 8; Italy, 4; France, 3; Spain, 2; Sweden, 17; Norway, 6; Denmark. 7; Russia, 7; Japan, 1; East Indies, 1; West Indies, 3; Poland, 4; Bohemia, 1. Hungary, 1; Switzerland, 1; Armenia, 1; Canada, 1; Unknown, 2. Total, 1,084.

	Negative.	Eczema.	Psoriasis.	Acne.	Acne rosacea.	Scabies.	Seborrhœa.	Epithelioma.	Syphilis.	Chromophytosis.	Fibroma.	Eczema Seb.	Zoster.	Paget's disease.	Sarcoma cutis.	Dermatitis.	Favus.	Trichophytosis.	Angioma.	Keloid.	Verruca.	Ichtyosis.	Nævus unius lateralis.	Atrophia cutis et ung.	Telangiectasis.	Hypertrichosis.	Pruritus.	Moles.	Keratosis pilaris.	Leucoderma.	Alopecia areata.	Pigmentations.	Sebaceous cyst.	Nævus vasc.	Premature grayness in patches.	Total.
Terminal dementia.....	294	6	...	13	5	1	9	2	3	6	10	...	2	...	...	7	...	1	1	2	1	3	1	29	27	36	7	5	6	1	1	1	...	1	1	502
Acute melancholia.....	34	1	1	3	...	...	6	...	2	...	...	...	...	...	...	...	...	...	1	...	...	...	...	2	1	4	...	3	...	...	...	...	2	...	...	60
Chronic melancholia	57	...	...	7	...	...	...	...	...	1	...	...	...	...	...	1	1	...	...	...	...	...	...	7	4	7	3	2	1	...	...	...	...	...	...	91
Acute mania.....	15	...	...	...	...	...	...	...	2	1	...	...	...	...	...	...	1	1	...	...	...	...	...	2	1	1	...	...	...	...	...	...	3	...	...	27
Chronic mania	83	...	...	2	...	...	3	1	...	4	2	...	...	...	...	...	...	...	...	...	...	...	...	17	5	5	...	...	1	...	...	...	...	...	1	130
Paranoia.....	60	3	1	3	1	...	3	...	...	1	3	...	...	...	...	...	...	...	1	1	1	...	...	11	4	8	...	...	...	1	...	1	...	1	....	104
Paresis	22	...	...	2	...	...	...	...	7	...	2	1	...	...	...	...	...	...	...	...	...	...	...	1	4	3	...	2	...	...	...	...	...	...	...	44
Epileptic dementia.....	41	...	...	8	...	...	1	...	2	...	...	...	1	1	...	...	...	...	...	...	...	...	...	5	...	8	...	3	...	...	...	...	...	...	...	71
Imbecility	19	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	1	1	...	...	...	...	1	...	...	...	26
Primary dementia.....	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	14
Secondary dementia	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4
Recurrent dementia.....	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
Alcoholic dementia.....	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
Puerperal dementia.....	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Circular insanity	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
General paralysis	4	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	...	...	...	...	...	...	...	...	...	...	10
Idiocy	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Unclassed.....	6	...	...	1	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	3	...	2	...	...	...	...	...	...	...	...	...	14
Total	665	11	2	39	6	1	24	3	17	14	19	1	2	1	1	9	2	2	3	3	2	3	1	89	59	78	11	15	8	2	1	4	5	2	2	1,107

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Third Day, September 20 — Clinical Session

The following cases were shown:

By Dr. J. C. White: (1) ANGIOMA SERPIGINOSUM. This case was reported to the society at the meeting at Washington in 1894, and published in the Journal of Cutaneous Diseases, December, 1894. The diseased area is now three or four times more extensive than at above date; otherwise, the appearances are unchanged.

(2) HYDROA VACCINIFORME (?). Patient exhibited is one of the children whose cases were presented to the Association at its meeting May 31, 1898. Since then, two children of the family affected in the same way have died. This boy now presents many and deep cicatrices upon face and limbs, but little fresh activity in the disease.

(3) XERODERMA PIGMENTOSUM. The patient exhibited, now aged 35, is one of the cases described to the Association at the meeting in August, 1885. In this case there is an unusual lack of the formation of keratoses, and until two years ago there was no development of epitheliomatous transformation, a single lesion of considerable size upon the thorax.

(4) Two cases of MULTIPLE FIBROMATA in mother and daughter. Mother, aged 55; surface generally occupied with fibromata, varying from size of small pea to that of English walnut; all soft, a few with peduncles. Skin generally darkened. No apparent mental weakness. Daughter, aged 25, shows a dozen growths, the largest being of the size of a filbert. Several patches of sharply defined melanoderma, very black, on chest, an inch or more in diameter, of irregular shape.

By Dr. Bowen: (1) A case for diagnosis, probably a primary lesion of the thigh; a raised, everted, exuberant ulcer, two inches in diameter, of nine weeks' duration, in a pregnant woman of 25. Microscopic examination of a piece showed a granulation tissue probably, from which no positive conclusions could be drawn. There had been a very indefinite eruption on the body.

(2) A case of BULLOUS DERMATITIS FOLLOWING VACCINATION in a boy of 8, that had existed for five years. The case was No. 5 in the list of cases published by the demonstrator, who has since seen two additional cases. The child has never been totally free from the eruption since 1898, and at present presents grouped vesicular and bullous lesions about the neck and ears, and in the regions of the flexures.

(3) A case of KERATOSIS FOLLICULARIS (Darier's psorospermose

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folliculaire vegetante) in a woman of 39, in which the lesions were confined to the head and hands, and had existed for many years, on the hands as long as she could remember.

(4) A case of PSORIASIS INVETERATA, that had existed uninterruptedly for fifteen years, healed by means of the Roentgen rays.

(5) An instance of HYDROA VACCINIFORME in a boy of 18, who had had repeated severe attacks from the age of 5 to that of 12, with complete immunity since. The face and hands remained deeply pitted, as if he had passed through a severe variola.

By Dr. Howe: A case of MORPHOEA. The patient was a woman 50 years of age; duration of disease four years. There was one large patch extending with irregular outline across the abdomen from side to side. It extended from the ensiform cartilage above to a line half-way from the umbilicus to the mons veneris. Under the left mamma was a patch the size of a half-dollar. There was also an isolated patch the size of the palm between the large central patch and the groin.

By Dr. C. J. White: (1) AINHUM. Negro, aged 42, born in Baltimore, and has lived since then in Cincinnati, Chicago, and for the last fifteen years in Boston. States that he never went barefoot as a boy. Ulceration of little toe of left foot began twelve years ago, without any previous glistening constricting band. Progress of disease very slow. X-Ray photograph shows phalanges of fourth and fifth toes distinctly atrophied.

(2) ARGYRIA. Man, aged 40, was given in 1899 nitrate of silver internally (amount not to be ascertained) for spinal spastic paralysis. His sister noticed darkening of skin in six months, but he continued to take the medicine for another half-year. Skin at present is blue-black in color while the lips and mucous membranes of mouth are even darker in hue. The cornea and bed of nails present a distinct bluish tinge. The pigmentation of the skin is limited principally to those parts exposed to the light but the whole body is slightly darker than normal.

(3) FAVUS OF NAILS. Polish Jewess aged 15; came to this country three years ago. At that time disease was but slightly evident. Since then she and her father have developed marked invasion of the nails by the Achorion Schönleinii. Neither patient has the disease on the scalp. After one year's treatment one nail has completely healed and three others on the left hand (only) present various phases of the disease.

(4) PARAKERATOSIS VARIEGATA OR ERYTHRODERMIE PITYRIASIQUE EN PLAQUES DISSEMINÉES. Polish Jew aged 40; has had the same con-

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dition covering the same amount of his body surface for eleven or twelve years. These lesions show different degrees of color at different times but patient cannot associate these color changes with the different seasons of the year. The trunk and extremities are mottled with roundish lesions varying from one to two inches in diameter. These lesions would be covered with fine scales if left untreated but do not itch. The man's health remains unaltered.

(5) SCLERODERMA. Irish-American woman, aged 35; lost her husband two years ago. Disease commenced on back of hand soon afterward, and now there exists a broad band of diseased tissue extending from tip of fourth finger up left arm and on to neck and down over left breast, the disease being limited strictly to left side of the body. The fourth and fifth fingers are contracted and the skin is in the pigmented and atrophic stage. Within three weeks the disease has appeared on the thigh.

(6) XERODERMA PIGMENTOSUM. Irish-American girl, aged 3; born in Massachusetts. At the age of 3 months, patient was taken out (month of April) of doors and immediately afterwards skin became very red and freckles soon developed, which have ever since persisted. Now the face and backs of hands present small, round, dark lentigines on a leucodermic skin. There is ectropion of left lower eyelid and a horny mass has already been removed from left cheek.

By Dr. Harding: (1) PRURITIC PAPULAR SYPHILODERM. Woman, 33 years of age, showing generalized eruption of excoriated pea-sized papules. Two weeks before, the patient showed an underlying macular eruption, and the itching of which she complained was evident from the way in which the papules were scratched. She had been for two weeks under antisyphilitic treatment when shown.

(2) TUBERCULOSIS VERRUCOSA CUTIS. Man, 77 years of age; general health good. Patch on the back of left hand two inches in diameter, which started twelve months ago after an abrasion; also on extensor surface of right wrist a patch the size of a quarter, of unknown duration. Diagnosis confirmed by microscope.

(3) ACNE VARIOLIFORMIS. Man, 24 years of age. Confluent eruption on face, scalp, and neck, also prominent on the pinna of the ears, and limited to these areas. First noticed about five months ago on the forehead and scalp, and spread gradually to the other parts. General health good and no signs of tuberculosis. For the last six weeks has been using a boric-acid ointment, under which there has been much improvement.

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The following photographs, drawings, lantern-slides, and models were exhibited:

Dr. C. W. Allen: Lantern-slides of xeroderma pigmentosum in boy of 15, with multiple epitheliomata of face and cancerous affection of both globes beneficially influenced by the Roentgen ray; carcinoma of the arm following X-Ray burn, carcinoma of forehead and of the nose and lip, osteo-sarcoma of jaw, epithelioma of cheek, several cancers of the breast improved under X-Ray treatment; two cases of rhinoscleroma; one of lepra unaffected, one of psoriasis improved, and one of lupus of the nose cured by the X-Rays.

Dr. I. Dyer: Photographs of a case of blastomycosis of the skin. Five pictures showing original condition and present condition.

Drs. J. N. Hyde and F. H. Montgomery: Photographs of lupus vulgaris (6); epithelioma (22), tuberculosis verrucosis cutis (3), keloid (3), scrofuloderma, mycosis fungoides, keratoderma, scleroderma, disseminated tuberculosis, lupus hypertrophicus complicated by carcinoma, and endothelioma (?), treated by X-Ray; photographs of erythema multiforme of palms, and mycosis fungoides.

Dr. F. J. Leviseur: Photographs of favus of the nails and scalp; favus of the nails before treatment, and after treatment by avulsion; favus of the nail five weeks after treatment by avulsion; moulages of favus (two cases); cases of ringworm, cigar-maker's nail, paper-sorter's nail, onychorrhexis (both hands), koilonychia, eczema, and pompholyx.

Dr. S. Pollitzer: Photographs illustrating his paper on the histology of herpes zoster.

Dr. W. A. Pusey: Photographs of acne, sycosis, epithelioma of the eyelids (3 cases), senile keratosis, recurrent carcinoma of the breast, pseudo-leukemia, leukemia, and blastomycetic dermatitis, treated with X-Rays; case of mycosis fungoides.

Dr. S. Sherwell: Photographs illustrating his paper on pellagra.

Dr. J. W. Wende: Photographs of 35 cases of smallpox, a portion proving the mildness of the epidemic in Buffalo during 1901, another portion showing the confluent variety; eight photographs

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illustrating his paper on an unusual case of epidermolysis bullosa hereditaria; photographs of impetigo, psoriasis, rosacea, herpes, zoster, dermatitis medicamentosa, ringworm of beard, and mycosis fungoides.

Dr. C. J. White: Photographs of urticaria pigmentosa; marked nail lesions in tinea favosa (2 cases), psoriasis (3 pictures), dermatitis exfoliativa (2 pictures), phthisis pulmonalis, and dystrophia unguium et pilorum hereditaria.

Dr. J. C. White: Photographs of bullous dermatitis following vaccination (9 examples), xeroderma pigmentosum (9 pictures), pemphigus, keratosis follicularis (psorospehmosis), and fibroma molluscum (2 examples).

Wigglesworth Collection: A large collection of wax models, representing a great many different forms of skin affections, which had been given to the Harvard University Medical School by Doctor Wigglesworth, a deceased member of this Association, was shown at the meeting.

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REPORT OF THE COMMITTEE ON STATISTICS

For the Year 1901

Your Committee on Statistical Returns presents herewith the combined reports for the year 1901 from Cincinnati, Boston, Brooklyn, Chicago, Cleveland, Montreal (Canada), New Orleans, Philadelphia, San Francisco, New York City, Washington, and St. Louis, twelve in all.

The total number of cases reported is 21,976. Compared with the returns for the year preceding, 1900, the cases here returned are fewer by 479, the reports for the year 1900 including one less than for the year closing December 31, 1901, that viz.: for San Francisco, the statistics of which are included in the combined returns now submitted. No return was made for either of the years compared from the city of Buffalo.

Of the more frequently encountered maladies, during the last year we treated 4,898 cases of eczema of all kinds, as against 5,587 during the year preceding; 1,812 cases of acne of all kinds, as against 1,758 of the previous year; 1,127 cases of impetigo of all kinds, as compared with 1,098 of the year preceding; 684 cases of psoriasis, being 97 more than during the previous year; 476 cases of pediculosis capitis, as against 399 of the previous year; and 2,290 cases of syphiloderma, being 161 more than during the preceding twelvemonth.

Of the cases more rarely encountered, there was reported one case of mycosis fungoides, from New York City; one case of pachydermatocele from Montreal, Canada; one case of monilethrix from St. Louis; one case of lepothrix from Chicago; one case of Aleppo boil from Chicago; one case of erysipeloid from Cleveland; two cases of hydradenitis, one each from New York City and from Philadelphia; two cases of impetigo herpetiformis, one each from Brooklyn and New Orleans; one case of kraurosis from Washington; and one case each of endothelioma, of keratosis follicularis contagiosa, of nævus unius lateris and of kerato-angioma, from Chicago.

Your Committee desires again to call attention to the fact that about one-half of the disorders with which the dermatologist of our day is confronted are readily classified. Of the total number now returned, the simpler inflammatory affections, including in this category the

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several forms of eczema, dermatitis, urticaria, lichen planus and milium, furnish a total of 6,400 cases. Adding the number of diseases due to the vegetable parasites (925) to those due to animal parasites viz.: 1,181, we have a total of disorders due to these two causes of 2,106. Combining these two classes with the syphilodermata, we have a total of 10,796 cases, giving nearly one-half of the figures represented in the grand total.

It is to be noted that the following named disorders, at present included in our alphabetical index, are not represented by any figures in the returns,viz.: Actinomycocis, adenoma sudoriparum, angioma serpiginosum, dermatitis epidermica (of Savill), equinia, framboesia, lymphangiectasis, mycetoma, myoma, myxoedema, pellagra, pemphigus vegetans, piedra, porokeratosis, sclerema neonatorum, trichorrexis, uridrosis, and xeroderma pigmentosum.

Your Committee still urges the coöperation and interest of the members of the Association, in its collation of dermatological statistics. These returns are neither voluminous, nor beyond criticism. They are, however, it is believed, quite as trustworthy as the figures given in the reports of the Census compiled by the Government; and while they do not furnish the proportion of skin diseases as related to all others occurring in this country, they at least faithfully represent the work of some of the best dermatologists of America and, as a matter of fact, are the sole basis for any knowledge of the subject which any one possesses. All said and done, no other statistics of this sort are anywhere compiled in the United States and the Dominion of Canada; and it may well be urged that the work which has now been industriously carried forward for somewhat more than a quarter of a century, be neither slighted nor abandoned until it has been demonstrated to be no longer of practical value.

JAMES NEVINS HYDE,
Chairman.

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TABLE I.

COMBINED RETURNS OF THE AMERICAN DERMATOLOGICAL ASSOCIATION FOR THE YEAR 1902, FROM JANUARY 1 TO DECEMBER 31, INCLUSIVE.

	Cincinnati.	Boston.	Brooklyn.	Chicago.	Cleveland.	Montreal, Can.	New York.	New Orleans.	Philadelphia.	San Francisco.	Washington, D.C.	St. Louis.	Total.	Per Cent.
Abscess	....	....	....	....	....	....	13	....	....	....	....	....	13	0.059
Acanthosis nigricans	....	....	....	....	....	....	....	....	....	....	....	....	.....	
Acne varioliformis	....	....	....	3	2	....	4	....	....	....	....	1	10	0 045
Acne vulgaris	127	603	90	219	55	40	314	83	20	6	96	119	1,712	7.79
Actinomycosis	....	....	....	....	....	....	....	....	....	....	....	....	.....	
Adenoma sebaceum	1	8	....	....	....	1	.....	3	....	....	....	....	12	0.054
Adenoma sudoriparum	....	....	....	....	....	....	.....	.....	....	....	....	....	.....	
Ainhum	....	1	....	....	....	....	.....	1	....	....	....	....	2	0.009
Albinismus. (*a*) generalis	....	....	....	....	....	....	.....	.....	....	....	....	....	.....	
(*b*) localis	....	1	....	....	....	....	.....	5	....	....	....	....	6	0.027
Aleppo boil	....	1	....	....	....	....	.....	.....	....	....	....	....	1	0.004
Alopecia	28	238	5	189	5	10	66	40	11	1	44	29	666	3.03
Alopecia areata	17	73	4	35	6	5	28	11	4	2	11	14	210	0 955
Anæsthesia	....	....	....	1	....	....	....	....	....	....	....	....	1	0.004
Angioma	....	23	....	5	....	2	....	....	....	....	....	8	38	0.172
Angioma cavernosum	....	....	....	....	....	....	2	1	....	....	....	....	3	0.013
Angioma serpiginosum	....	....	....	....	....	....	....	....	....	....	....	....	.....	
Anidrosis	....	....	2	....	3	....	....	1	....	....	....	....	6	0.027
Anthrax	....	....	....	....	....	1	....	....	....	....	....	....	1	0.004
Asphyxia localis (Raynaud's disease)	1	1	....	....	....	2	1	....	....	....	....	....	5	0.022
Atheroma (wen)	....	1	2	....	2	....	6	....	....	....	....	3	14	0.063
Atrophia maculosa	....	....	....	....	1	....	....	....	....	....	....	....	1	0.004
Atrophia pilorum propria	....	....	15	3	....	....	....	....	....	....	....	....	18	0.081
Atrophia senilis	....	....	....	....	....	3	....	....	....	....	....	....	3	0.013
Atrophia striata	1	....	10	....	....	....	....	....	....	....	....	....	11	0.050
Atrophia unguis	....	1	4	1	....	2	....	....	....	....	....	2	10	0.045
Atrophoderma symmetricale	....	....	5	....	....	....	....	....	....	....	....	....	5	0.022
Blastomycosis	....	....	....	8	....	....	....	....	....	....	....	....	8	0.036
Bromidrosis	....	1	3	2	....	....	12	....	....	....	....	3	21	0.095
Callositas	....	9	....	....	....	....	20	....	....	2	....	2	33	0.150
Canities	....	5	....	5	....	....	1	....	....	....	3	4	18	0.081
Carbunculus	6	..	1	2	2	15	2	....	..	1	4	6	39	0.177
Carcinoma	1	....	....	....	....	12	....	....	....	....	....	5	18	0.081
Cellulitis (phlegmona diffusa)	1	....	....	....	....	3	19	....	....	....	2	1	26	0.118
Chloasma	9	22	....	11	2	1	6	20	2	1	7	13	84	0.382
Chromidrosis	....	....	....	....	....	....	2	....	1	....	....	....	3	0.013
Cicatrix	1	3	....	2	1	....	2	2	....	....	....	3	14	0.063
Clavus	....	8	....	....	....	....	1	....	....	1	2	....	12	0.054
Coccidoides	....	....	....	....	....	....	....	....	....	1	....	....	1	0.004
Comedo	....	33	25	6	2	5	100	4	....	....	34	7	216	0.982
Condyloma acuminatum	6	....	....	....	1	....	....	....	....	3	....	....	10	0 045
Cornu	....	....	....	....	....	....	1	2	....	....	....	1	4	0.018
Cystus (dermoid)	....	....	....	4	....	....	1	2	....	....	....	....	7	0.031
Cystus (sebaceous)	....	....	....	....	....	....	....	....	....	1	....	....	1	0.004
Dermatalgia	....	....	....	....	....	....	1	....	....	....	....	1	2	0.009
Dermatitis calorica	3	10	3	4	2	4	36	....	....	1	1	7	71	0.323
Dermatitis epidemica (Savill)	....	....	....	....	....	....	....	....	....	....	....	....	.....	
Dermatitis exfoliativa	3	....	2	....	6	1	....	....	....	....	....	2	14	0.063
Dermatitis gangrænosa	6	....	....	....	....	....	....	....	....	....	....	....	6	0.027
Dermatitis hemostatica (Klotz)	....	....	....	....	....	....	....	2	....	....	....	....	2	0.009
Dermatitis herpetiformis	7	11	3	7	....	....	5	2	....	2	....	5	42	0.191
Dermatitis hiemalis	....	....	....	....	4	....	....	....	....	....	....	....	4	0.018
Dermatitis maligna	3	....	....	....	....	....	....	....	....	....	....	....	3	0.013
Dermatitis medicamentosa	2	16	3	12	2	10	32	3	1	2	2	11	96	0 436
Dermatitis papillaris capillitii	....	1	2	4	....	2	....	1	....	1	....	....	11	0.050
Dermatitis repens	....	....	....	....	....	....	11	....	....	....	....	....	11	0.050
Dermatitis traumatica	5	20	1	11	....	1	38	11	....	1	....	12	100	0.450

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TABLE I—*Continued.*

	Cincinnati.	Boston.	Brooklyn.	Chicago.	Cleveland.	Montreal, Can.	New York.	New Orleans.	Philadelphia.	San Francisco.	Washington, D. C.	St. Louis.	Total.	Per Cent.
Dermatitis venenata	15	220	....	40	7	3	40	1	4	2	19	20	371	1.688
Dermatitis (X ray)	....	....	....	....	....	....	....	....	....	1	....	....	1	0.004
Ecthyma	3	12	....	....	3	2	13	6	5	1	4	8	57	0.259
Eczema	211	1205	138	404	133	112	1279	103	138	58	182	348	4,311	19.612
Eczema seborrhoïcum	4	32	12	31	30	17	126	141	....	9	13	76	487	2.216
Elephantiasis	2	1	....	....	....	1	....	1	....	....	....	....	5	0.022
Endothelioma	....	....	....	1	....	....	....	....	....	....	....	....	1	0.004
Epithelioma	9	62	16	62	8	10	26	44	5	16	9	36	303	1.378
Epithelioma multiplex benign. cystic	....	....	3	....	....	....	....	....	....	....	....	....	3	0.013
Equinia (glanders)	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Erysipelas	9	33	1	1	2	4	28	....	....	5	5	8	96	0.436
Erysipeloid	....	....	....	....	1	....	....	....	....	....	....	....	1	0.004
Erythema exudativum	4	....	6	17	1	1	6	2	....	....	....	10	46	0.209
Erythema hyperæmicum	....	5	4	54	5	....	29	6	7	....	4	7	121	0.550
Erythema induratum scrofulosorum	....	2	....	....	....	....	3	....	....	....	....	....	5	0.022
Erythema multiforme	3	49	3	17	2	9	21	11	....	1	2	2	120	0.546
Erythema nodosum	....	12	....	....	1	1	4	....	....	....	....	1	19	0.086
Erythema scarlatiniforme	1	1	6	....	..	....	2	....	....	....	....	1	11	0 050
Erythrasma	17	....	....	....	....	....	....	....	....	....	....	1	18	0.081
Fibroma	2	6	....	1	....	1	1	1	....	....	....	11	23	0.104
Folliculitis	....	5	....	26	6	....	16	8	....	1	....	....	72	0.324
Folliculitis decalvans	2	1	....	1	....	1	4	....	....	....	....	1	10	0.045
Frambœsia (yaws)	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Furunculus	28	97	5	26	19	12	134	22	16	16	13	19	402	1.828
Granuloma fungoides	....	....	....	2	....	....	4	..	....	....	....	....	6	0.027
Herpes simplex	13	46	10	43	4	5	32	1	1	7	5	15	182	0.828
Herpes zoster	6	59	13	34	9	7	48	22	4	2	14	18	236	1.073
Hidradenitis suppurativa	....	....	....	....	....	....	1	..	....	1	....	....	2	0.009
Hidroa vacciniforme	....	....	....	5	....	....	1	....	....	....	....	....	6	0.027
Hidrocystoma	....	3	1	4	....	....	....	1	....	1	....	1	11	0.050
Hyperæsthesia	....	4	....	1	....	....	2	1	....	....	....	....	8	0.036
Hyperidrosis	4	24	....	7	....	....	32	3	....	....	2	8	80	0 360
Hypertrichosis	3	28	....	23	7	....	15	8	6	....	31	28	149	0.678
Ichthyosis	4	11	....	6	2	3	5	....	1	1	2	8	43	0.195
Ichthyosis congenita	1	....	....	....	....	1	....	....	....	3	....	....	5	0 022
Icterus	....	....	1	1	....	5	....	....	....	....	....	1	8	0.036
Impetigo	4	....	15	58	....	....	73	4	....	....	....	12	163	0.741
Impetigo contagiosa	7	441	35	....	39	55	158	28	79	22	43	57	964	4.386
Impetigo herpetiformis	....	....	1	....	....	....	....	1	....	....	....	....	2	0 009
Intertrigo	3	....	....	6	....	2	28	2	....	2	2	5	50	0.220
Keloid	1	9	....	4	....	1	16	2	....	1	3	3	40	0.181
Kerato angioma	....	....	....	1	....	....	....	....	....	....	....	....	1	0.004
Keratosis follicularis	1	....	....	....	1	....	1	1	....	....	....	....	4	0.018
Keratosis follicularis contag	....	....	....	1	....	....	....	....	....	....	....	....	1	0.004
Keratosis palmaris et plantaris	2	....	6	7	....	....	3	4	....	1	....	1	24	0.108
Keratosis pilaris	....	8	....	3	....	....	....	....	....	1	....	3	15	0 066
Keratosis senilis	....	24	....	....	3	....	....	....	....	....	....	15	42	0 191
Kraurosis	....	....	....	....	....	....	....	....	....	....	....	1	1	0.004
Lentigo	2	1	2	4	2	....	6	1	....	....	4	5	27	0.122
Lepothrix	....	....	....	1	....	....	....	....	....	....	....	....	1	0.004
Lepra	....	....	....	....	....	....	1	23	....	....	....	3	27	0.122
Leuconychia	....	....	....	....	....	....	....	....	....	....	....	1	1	0.004
Leucoplakia	....	....	....	1	....	....	1	....	....	....	....	....	2	0.009
Lichen pilaris (Crocker)	....	....	....	....	....	....	1	....	....	....	....	....	1	0.004
Lichen planus	13	14	4	24	2	4	24	1	2	1	5	12	106	0.483

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TABLE I—*Continued.*

	Cincinnati.	Boston.	Brooklyn.	Chicago.	Cleveland.	Montreal, Can.	New York.	New Orleans.	Philadelphia.	San Francisco.	Washington, D. C.	St. Louis.	Total.	Per Cent.
Lichen ruber	5	....	....	....	....	....	1	1	....	....	1	....	8	0.036
Lichen scrofulosorum	3	....	....	....	....	....	1	1	....	....	....	....	5	0.022
Lichen simplex	....	....	....	....	....	....	....	4	....	....	....	....	4	0.018
Lipoma	....	1	....	1	....	....	1	1	....	....	....	....	4	0.018
Livedo	1	....	....	....	....	....	....	....	....	....	....	....	1	0.004
Lupus erythematosus	4	18	....	15	3	5	14	4	....	1	2	5	71	0.323
Lymphangiectasis	....	....	....	....	....	....	....	....	....	....	....	....	....	
Lymphangioma	....	....	....	....	....	2	2	....	....	....	....	....	4	0.018
Lymphangioma circumscriptum	....	1	....	....	....	1	....	....	....	....	....	....	2	0.009
Lymphangitis	1	....	....	....	....	6	3	2	....	....	....	....	12	0.054
Melanoderma	....	....	....	2	3	....	....	....	....	....	....	....	5	0.022
Miliaria (prickly heat)	8	3	20	1	....	2	42	6	....	....	6	19	107	0.486
Milium	....	3	....	7	....	....	8	1	....	....	4	8	31	0.141
Molluscum contagiosum (epitheliale)	3	3	....	....	....	2	8	....	1	1	....	3	21	0.095
Monilethrix	....	....	....	....	....	....	....	....	....	....	....	1	1	0 004
Morbilli	5	1	....	....	5	....	....	....	....	....	....	1	12	0.054
Morphœa	....	....	....	7	1	....	....	....	....	....	....	2	10	0.045
Mycetoma	....	....	....	....	....	....	....	....	....	....	....	....	....	
Mycosis fungoides	....	....	....	....	....	....	1	....	....	....	....	....	1	0.004
Myoma	....	....	....	....	....	....	....	....	....	....	....	....	....	
Myxœdema	....	....	....	....	....	....	....	....	....	....	....	....	....	
Nævus fibrosus	....	....	....	3	1	..	.....	2	....	....	....	9	15	0.067
Nævus lipomatodes	....	1	....	....	....	....	....	....	....	....	....	....	1	0.004
Nævus papillaris	1	....	....	1	....	....	1	1	....	....	....	....	4	0 018
Nævus pigmentosus	3	3	....	14	5	2	14	4	1	....	3	16	75	0.341
Nævus pilosus	...	5	....	1	1	....	1	1	1	....	....	3	13	0.059
Nævus unius lateralis	....	....	....	1	....	....	....	....	....	....	....	....	1	0.004
Nævus vascularis	1	2	....	7	....	4	21	2	1	1	4	....	43	0.196
Neuroma	..	....	....	1	....	1	....	....	....	....	....	....	2	0.009
Œdema circumscriptum acutum	1	15	....	4	....	....	2	3	....	1	....	4	30	0.136
Onychauxis	2	....	....	4	....	....	....	3	....	....	1	3	13	0.059
Onychia	4	1	....	3	....	....	2	....	....	....	....	3	13	0.059
Pachydermatocele (Dermatolysis)	....	....	....	....	....	1	....	....	....	....	....	....	1	0 004
Papilloma	....	....	....	2	....	....	22	5	....	1	3	1	32	0 146
Paronychia	3	6	....	1	....	....	12	....	....	....	....	4	26	0.118
Pediculosis capillitii	6	186	15	9	14	18	176	4	17	12	4	15	476	2.166
Pediculosis corporis	31	8	7	11	11	13	32	2	3	11	1	7	132	0.606
Pediculosis pubis	2	18	2	13	2	1	12	2	1	....	2	2	56	0.255
Pellagra	....	....	....	....	....	....	....	....	....	....	....	....	....	
Pemphigus	1	1	1	5	1	1	4	1	....	....	....	....	15	0.067
Pemphigus vegetans	....	....	....	....	....	....	....	....	....	....	....	....	....	
Pernio	1	....	1	2	....	2	17	....	....	1	1	....	25	0.112
Piedra	....	....	....	....	....	....	....	....	....	....	....	....	....	
Pityriasis mac. et circ	....	....	....	....	3	....	....	....	....	....	....	....	3	0.013
Pityriasis rosea	....	32	....	10	....	5	27	5	1	....	6	7	93	0.423
Pityriasis rubra	2	....	....	....	....	....	1	..	....	....	....	....	3	0.013
Pityriasis rubra pilaris	1	1	....	4	....	2	....	....	....	....	1	....	9	0 040
Pityriasis simplex	....	....	....	....	1	....	3	....	....	2	....	3	9	0 040
Porokeratosis	....	....	....	....	....	....	....	....	....	....	....	....	....	
Pompholix	....	....	....	14	....	....	15	88	....	....	....	7	125	0.567
Prurigo	15	1	3	1	7	....	5	....	....	2	1	....	35	0.157
Pruritus	10	86	13	100	15	24	45	17	4	9	4	26	353	1.606
Psoriasis	55	160	59	110	12	37	170	19	7	2	19	24	684	3.112
Purpura	8	13	4	6	2	3	17	2	1	2	1	3	62	0.282
Rhinoscleroma	....	....	....	....	....	2	....	....	....	....	....	....	2	0.009
Rosacea	27	58	....	70	8	12	118	19	....	5	6	28	346	1 574
Rubella (Rötheln)	....	....	....	....	3	....	1	....	....	....	3	4	11	0.050

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TABLE I—*Continued.*

	Cincinnati.	Boston.	Brooklyn.	Chicago.	Cleveland.	Montreal, Can.	New York.	New Orleans.	Philadelphia.	San Francisco.	Washington, D. C.	St. Louis.	Total.	Per Cent.
Sarcoma	....	....	....	....	....	....	....	....	....	1	1	....	2	0.009
Scabies	33	153	29	30	47	10	125	46	15	21	37	25	573	2.607
Scarlatina	2	2	....	1	5	4	1	....	....	....	....	1	16	0.072
Sclerema neonatorum	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Scleroderma	....	....	....	2	....	1	1	1	....	....	....	1	6	0.027
Scrofuloderma	3	....	1	3	1	4	19	....	....	....	....	3	34	0.154
Seborrhœa	29	225	15	93	51	20	42	24	....	4	29	16	548	2.493
Staphylococcia	1	10	....	....	8	....	....	....	....	1	....	25	45	0.204
Sudamen	....	....	....	....	....	....	21	1	2	....	....	....	24	0.109
Sycosis lupoides	....	....	....	2	....	10	1	....	....	....	....	....	13	0.059
Sycosis vulgaris	15	10	10	15	....	....	20	2	....	3	....	7	82	0.373
Syphiloderma	440	284	206	398	95	48	271	156	6	102	117	167	2,290	10.424
Telangiectasis	4	....	....	3	....	1	2	6	....	....	4	3	23	0.104
Tinea favosa	1	11	15	8	2	2	22	....	1	1	....	2	65	0.295
Tinea tricophytina	139	75	....	....	....	....	....	....	44	....	....	....	258	1.740
(*a*) Circinata (corporis)	10	18	6	17	9	11	66	31	....	1	5	10	184	0.837
(*b*) Tonsurans (capitis)	14	17	50	21	8	17	138	2	....	....	3	15	285	1.296
(*c*) Sycosis (barbæ)	1	4	5	10	2	1	31	6	....	1	4	2	67	0.304
Tinea versicolor	3	27	10	31	6	2	48	19	....	1	7	12	166	0.755
Trichorrexis	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Tuberculosis cutis	....	26	....	....	....	....	7	....	....	....	....	....	33	0.150
Lupus vulgaris	10	3	3	6	2	3	7	....	1	....	2	4	41	0.186
Tuberculosis verrucosa	2	....	4	2	....	....	....	....	....	1	....	1	11	0.050
Ulcus	117	129	....	29	3	10	171	12	....	11	4	56	542	2.466
Ulcus Molle	10	29	....	....	....	....	24	25	....	33	....	....	121	0.550
Ulerythema sycosiforme (Unna)	....	....	....	....	....	....	....	1	....	....	....	....	1	0.004
Uridrosis	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Urticaria	30	259	12	19	9	32	220	18	2	9	9	25	644	2.976
Urticaria pigmentosa	....	....	1	....	1	....	1	....	....	....	....	....	3	0.013
Vaccinia	1	3	2	11	1	....	12	....	....	....	2	10	41	0.186
Varicella	2	17	10	6	8	1	42	4	5	3	2	15	115	0.521
Variola	2	1	3	15	12	1	1	1	....	1	....	9	46	0.209
Verruca	4	54	10	37	9	6	30	8	8	1	9	16	192	0.873
Verruga peruviana	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Vitiligo	5	9	3	11	4	....	11	15	....	....	5	9	72	0.324
Xanthoma	1	1	....	7	....	1	3	1	1	....	3	6	24	0.108
Xeroderma pigmentosum (Melanosis lenticularis progressiva)	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Xerosis	....	8	....	2	1	....	....	....	....	....	4	1	16	0.072
Unclassified	....	....	29	....	5	....	....	26	....	7	....	3	70	0.315
Total	....	....	....	....	....	....	....	....	....	....	....	....	21,976	

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LIST OF THE PUBLICATIONS OF MEMBERS

During the Year Ending June 1, 1902

ALLEN, DR. W. C. 1. The Nature of Cutaneous Epithelioma, and Remarks on X-Ray Treatment. *N. Y. Med. Record,* January 25, 1902. 2. Lichen Planus as a Vesicular and Bullous Affection. *Journal of Cutaneous and Genito-Urinary Diseases.* 3. The Practitioner's Manual. Second Edition. Wm. Wood & Co., 1902. 4. Radio-therapy in Cancer and Skin Diseases. *The New York State Journal of Medicine,* June 1, 1902. 5. Rhinoscleroma. *Journal of the American Medical Association,* December 14, 1901. 6. Skin Diseases as They Affect Longevity. *The Medical Examiner and Practitioner,* New York, March, 1902.

BOWEN, DR. J. T. 1. Six Cases of Bullous Dermatitis Following Vaccination and Resembling Dermatitis Herpetiformis. *Journal of Cutaneous and Genito-Urinary Diseases,* September, 1901. 2. Reports on Dermatology. *Boston Medical and Surgical Journal.* 3. Articles in *Reference Handbook of the Medical Sciences.*

BULKLEY, DR. L. D. 1. Unrecognized Syphilis in General Practice. *International Medical Magazine,* December, 1901.

CORLETT, DR. W. T. 1. A Treatise on the Acute Infectious Exanthemata. F. A. Davis Company. 1901.

DYER, DR. I. 1. The History of the Louisiana Leper Home. *New Orleans Medical and Surgical Journal,* May, 1902. 2. Dandruff: Its Limitation and Complications. *New York Medical Review of Reviews,* November 25, 1901.

FORDYCE, DR. J. A. 1. What Is Rodent Ulcer? *Transactions of the Medical Society of the State of New York,* 1901. 2. Clinical Observations on Syphilis. *New York Medical Record,* 1901, Vol. 60, page 83. 3. Two Cases of a Rare Papular Disease Affecting the Axillary Region (conjointly with Dr. George Henry Fox). *Journal of Cutaneous and Genito-Urinary Diseases,* 1902, Vol. 20, page 1. 4. Cancer of the Skin. *Journal of Cutaneous and Genito-Urinary Diseases,* 1902, Vol. 20, page 147. 5. Article on Multiple Be-

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nign Cystic Epithelioma of the Skin. *Reference Handbook of the Medical Sciences,* Vol. 3, Wm. Wood & Company, 1901.

GRINDON, DR. J. 1. Vaccination. *St. Louis Courier of Medicine,* June, 1901. 2. Parasitic Diseases of the Nails. *Journal of Cutaneous and Genito-Urinary Diseases,* November, 1901.

FOX, DR. G. H. 1. Photographic Atlas of the Diseases of the Skin. 16 parts. Physicians' Edition. J. B. Lippincott & Company, Philadelphia. 2. Smallpox Illustrated. 2 parts. J. B. Lippincott & Company, Philadelphia.

HARDAWAY, DR. W. A. 1. Some Remarks on the Difficulties of Diagnosis in Smallpox. *St. Louis Medical Review,* May 3, 1902. 2. Syphilis and Marriage. *St. Louis Courier of Medicine,* March, 1902.

HARTZELL, DR. M. B. 1. A Case of Dermatitis Vegetans. *Journal of Cutaneous and Genito-Urinary Diseases,* October, 1901. 2. The Treatment of Itching. *Therapeutic Gazette,* February, 1902. 3. A Case of Fibroma Molluscum. *American Journal of the Medical Sciences,* February, 1902. 4. Herpes; Herpes Zoster. *Reference Handbook of the Medical Sciences,* Vol. 5, 1902.

KLOTZ, DR. H. G. 1. Reports on Skin and Venereal Diseases for the *Achiv für Dermatologie.*

MONTGOMERY, DR. D. W. 1. Cause of the Streaks in Nævus Linearis. *Journal of Cutaneous and Genito-Urinary Diseases,* October, 1901. 2. Instances of Spontaneous Cure in a Leper Family. *Medical Record,* April 19, 1902. 3. Article on Ichthyosis. *Reference Handbook of the Medical Sciences,* 1902. 4. Demonstration of Patients Treated for Cancer with Arsenical Paste (conjointly with Howard Morrow, M. D.). *Occidental Medical Times,* February, 1901.

MONTGOMERY, DR. F. H. 1. Two Cases of Cutaneous Blastomycosis. *Journal of Cutaneous and Genito-Urinary Diseases,* May, 1902.

POLLITZER, DR. S. 1. The Inflammatory Diseases of the Nails. *Journal of Cutaneous and Genito-Urinary Diseases,* November, 1901. 2. The Diagnosis of Smallpox. Published in a *Practical Treatise on Smallpox.* J. B. Lippincott & Company, 1902.

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PUSEY, DR. W. A. 1. Roentgen Rays in the Treatment of Diseases of the Skin. *The Journal of the American Medical Association,* September 28, 1901. 2. Cases of Sarcoma and Hodgkin's Disease Treated by Exposure to X-Rays. *Journal of the American Medical Association,* January 18, 1902. 3. Report of Cases Treated with Roentgen Rays. *Journal of the American Medical Association,* April 12, 1902. 4. Acne and Sycosis Treated by Exposure to Roentgen Rays. *Journal of Cutaneous and Genito-Urinary Diseases,* May, 1902.

RAVOGLI, DR. A. 1. Notes on Ringworm. *New York Medical Journal,* June 29, 1901. 2. A Case of Dermatitis Exfoliativa Neonatorum (Ritter). *Cleveland Medical Gazette,* August, 1901. 3. Clinical Notes on Gleet. *New York Medical Journal,* 1902.

SHEPHERD, DR. F. J. 1. Two Cases of Blastomycosis. *Journal of Cutaneous and Genito-Urinary Diseases,* April, 1902.

SHERWELL, DR. S. 1. Cutaneous Manifestations in Diabetes. *The Medical News,* June 29, 1901. 2. A Few Remarks on Diseases of the Skin, with Relation to General and Special Therapy. *Medical Record,* March 15, 1902. 3. Reviews and Book Notices for *Brooklyn Medical Journal.*

STELWAGON, DR. H. W. 1. An Extraordinary Case of Quinine Susceptibility. *Journal of Cutaneous and Genito-Urinary Diseases,* January, 1902.

VAN HARLINGEN, DR. A. 1. Recent Views of the Origin and Nature of Herpes Zoster. *American Journal of Medical Sciences,* January 1902, page 141. 2. Remarks on Vaccination in Relation to Skin Diseases and Eruptions Following Vaccination. *The Philadelphia Medical Journal,* January 25, 1902.

WENDE, DR. G. W. 1. A Case of Lymphatic Leukaemia Apparently Developing Out of Hodgkin's Disease, Accompanied by Leukaemic Lesions and Pigmentations of the Skin, Culminating in Streptococcus Infection. *The American Journal of the Medical Sciences,* December, 1901. 2. Vegetating Dermatitis Developing During the Course of Infantile Eczema. *Journal of Cutaneous and Genito-Urinary Diseases,* February, 1902. 3. Article on Elephantiasis. *Wood's Reference Handbook of the Medical Sciences.*

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WHITE, DR. C. J. 1. Articles on Dermatitis Calorica, Dermatitis Epidemica, Dermatitis from Roentgen Rays, Dermatitis Herpetiformis, Dermatitis Repens, Dermatitis Malignant Papillary, and Dermatolysis. *Reference Handbook of the Medical Sciences.* 2. Molluscum Contagiosum. Published in conjunction with Dr. W. H. Robey, Jr., in *2d Annual Report* of Cancer Investigation Committee of Harvard University. *Journal of Medical Research,* February, 1902. 3. Colloid Degeneration of the Skin. *Journal of Cutaneous and Genito-Urinary Diseases,* February, 1902.

WHITE, DR. J. C. 1. Dermatitis from Caterpillar of Brown-Tail Moth. *Boston Medical and Surgical Journal,* June 13, 1901. 2. Errors in Diagnosis of Syphilis. *Boston Medical and Surgical Journal,* January 16, 1902. 3. Poisoning by Fur. *Boston Medical and Surgical Journal,* March 6, 1902.

WHITEHOUSE, DR. H. H. 1. Article on Eczema. *Reference Handbook of the Medical Sciences,* Vol. III, pages 708-727.

WINFIELD, DR. J. M. 1. Article on Erythema. *Buck's Reference Handbook of the Medical Sciences,* Vol. III. Wm. Wood & Company, New York. 2. Five Book Reviews (Dermatological and Genito-Urinary). *Brooklyn Medical Journal,* Brooklyn, N. Y.

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AT ITS

TWENTY-SIXTH ANNUAL MEETING

HELD IN

BOSTON, MASS., SEPTEMBER 18TH, 19TH AND 20TH, 1902

Official Report of the Proceedings

BY

FRANK HUGH MONTGOMERY, M.D., *Secretary*

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